Proficy* Historian

GETTING STARTED

Version 4.0

August 2010

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Getting Started with Historian

Before you begin installing Historian, please take some time to review the Getting Started with Historian manual.

This manual includes information about the following:

- An Overview of Historian
- Setting up the Historian Environment
- Installing Historian
- Implementing Historian Security
- Retrieving Data from Historian
- Using Historian with iFIX

This manual provides descriptive material and specific operating procedures for performing all common tasks.

Reference Documents

For related information about Historian, refer to the following documents:

- Using the Historian Administrator
- Historian Data Collectors

- Using the Historian Excel Add-In
- Historian Alarms and Events
- Migrating Advanced and Classic Historian Data
- Using the Historian OLE DB Provider
- Historian Software Development Kit (SDK) Online Help System

What's New in Historian 4.0

64-bit Data Archiver support

Historian 4.0 Server takes the next big step and is now built with 64-bit code. You can now install "Proficy Historian 4.0 Server" on both 32 bit x86 systems and 64 bit "x64" systems. Historian 4.0 installer will automatically detect and install 32-bit or 64-bit Historian 4.0 Server based on system architecture.

Move to 64-bit not only takes a full advantage of all the memory in your 64-bit Windows operating system, but also boosts overall Historian performance, security, and responsiveness.

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32 bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

For more information, refer to the Installing the Historian Server topic in the online help.

Improved Scalability

Proficy Historian now supports up to 2 Million tags with a sustained data write rate of 150,000 samples per second (that is, 9 Million events per minute).

For more information, refer to the Hardware Requirements topic in the online help to determine the size of the Historian Server.

Microsoft Windows 7 support

You can run Historian 4.0 on Windows XP Embedded, Windows 7 or Windows Server 2008 R2 operating systems

For more information, refer to the Installing the Historian Server topic in the online help.

Maximum Archive Size

Proficy Historian now supports maximum Archive Size of 64 GB per archive.

For more information, refer to the Adding Archives topic in the online help.

Archive Backup and Restore using Volume Shadow Copy Services

Proficy Historian now supports using Windows Volume Shadow Copy Services which is faster backup technology to quickly backup and restore large archive files. Using the Volume Shadow Copy Services, you can backup and restore large archives reliably and quickly in a short period of time without affecting the data collection. Windows Backup uses Volume Shadow Copy Service (VSS) and block-level backup technology to back up and recover files quickly.

For more information, refer to the Backing Up an Archive using Volume Shadow Copy Service topic in the online help.

Tag Rename

Historian now allows you to modify or update tag names. You can rename tags multiple times, but only the latest active tag name will be visible in the Tags list. You can rename tags using the Non-Web Historian Administrator, Excel Add-in, ihuAPI, and ihSDK. Tag renaming will only update or modify tag names without modifying or updating the tag properties.

NOTE: *If you delete a renamed tag, then all the aliases will also be deleted.*

For more information, refer to the Renaming a Tag topic in the online help.

Pre-created Archive

When a data starts loading into an archive, Historian will now asynchronously create a new, empty archive file of the same user-specified size. Whenever current archive becomes full, Historian will immediately serve data to a newly created archive file. This significantly reduces archive creation and transition time.

For more information, refer to the Setting Archive Size topic in the online help.

Improved Dynamic Archive Caching

Dynamic Archive Caching has been improved to optimize the performance of the Data Archiver. By default, Proficy Historian now caches 100 archives. With this, Historian now reduces the memory usage per archive and allows you to keep more data online.

For more information, refer to the Dynamic Archive Caching topic in the online help.

Improved Disk Cache Management

Proficy Historian now allows you to specify the maximum disk cache memory that an archiver can use. If your computer has extra memory, then you can increase the disk cache. Increasing the disk cache memory optimizes the Historian performance.

For more information, refer to the Disk Caching topic in the online help.

Improved checks for disk space availability

Proficy Historian now periodically checks to make sure you have configured amount of free disk space to save the archives, buffer files, and log files. If there is insufficient disk space, the Data Archiver shuts down and a message is logged into the log file.

For more information, refer to the Setting Archive Size topic in the online help.

Overview of Historian

Proficy Historian is a high performance data archiving system designed to efficiently collect, store, and retrieve time-based information at extremely high speed efficiently. The system architecture consists of the following:

Historian Server – The Historian server is the central point for managing all of the client and collector interfaces, storing and (optionally) compressing data and retrieving data. All tag data (numbers, strings, BLOBs) are stored in a proprietary format in the archive database. The Archive Database consists of several files, each of which represents a specific time period of historical data.

If licensed for the "Alarm and Event" option then the server also manages the storage and retrieval of OPC alarms and events in either a SQL Server or MSDE database.

Collectors – The Historian includes several types of data collectors for collecting data from a wide variety of applications including: iFIX v5.0SP1+, Machine Edition, OPC 1.0 or 2.0, OPC Alarms & Events, Files (csv or xml), and OSI PI.

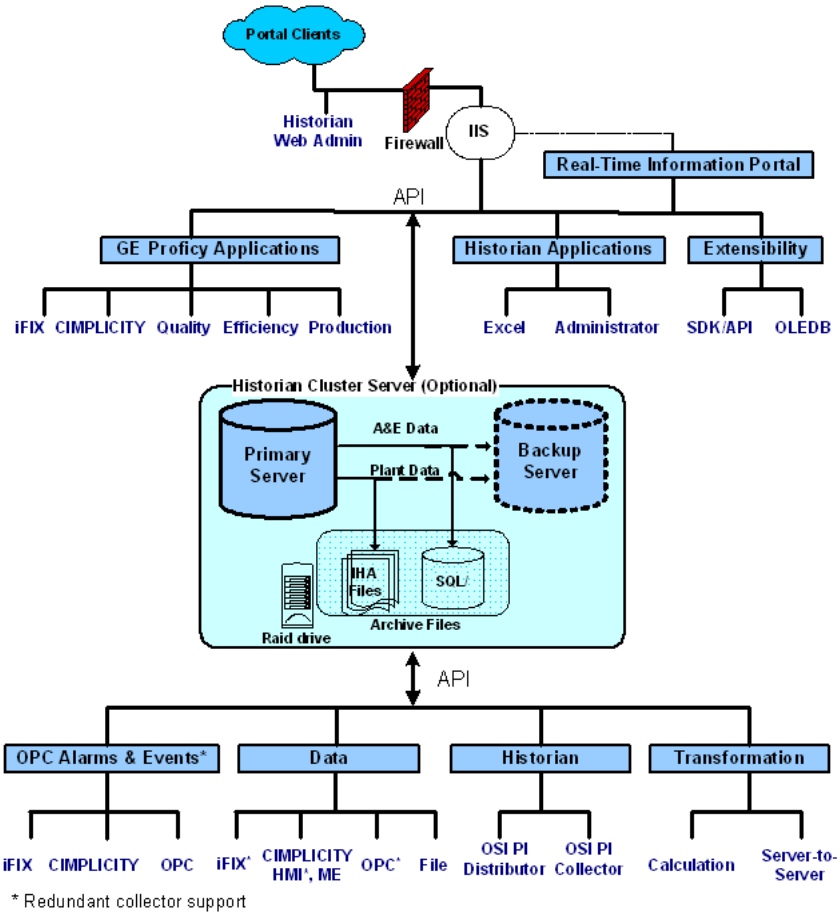
NOTE: *To collect data from a CIMPLICITY, you must use the Historian OPC collector with the CIMPLICITY OPC Server.*

The Calculation collector is designed to perform math and analysis on Historian data and store the results on the server. The Server-to-Server collector boasts the same calculation capabilities as the Calculation collector, but it stores the results on a remote server.

Most collectors are capable of performing first-order "dead band" compression as well as a "browse & add" configuration and store & forward buffering.

Clients – All client applications retrieve archived data through the Historian API.

The Historian API is a client/server programming interface that maintains connectivity to the Historian Server and provides functions for data storage and retrieval in a distributed network environment.



Typical Historian System

The Historian Archive indexes all information by Tagname, a unique identifier for a

specific measurement attribute. For iFIX users, an Historian Tagname normally represents a Node.Tag.Field (NTF). Searching by Tagname and Time Range is a common and convenient way to retrieve data from Historian. If you use this technique to retrieve data from the Archiver, you do not need to know which archive file on the Historian Server contains the data. You can also retrieve data using a filter tag.

Historian is capable of storing many different data types, such as Floating Point, Integer, String, and BLOB (undetermined binary data type), such as an Excel spreadsheet, a PDF file, or a Word file. The source of the data defines the ability of Historian to collect specific data types.

System Components

A Typical Historian System contains several components:

- One or more Historian Data Collectors with various collection interfaces
- One or more Historian Servers
- One or more Historian Web Administrators
- One or more Historian Non-Web Administrators
- Historian OLE DB provider
- One or more Historian HDA Servers
- One or more Excel Add-In packages, installed on any client node
- Programs using Historian User API
- Programs using Software Development Kit (SDK)

All clients communicate with the Server through the Historian API. The subsections that follow list the functions performed by each component.

Historian Alarms and Events

Historian Alarms and Events provides tools to collect, archive, and retrieve alarm and event data in Historian.

Refer to the Historian Alarms and Events manual for more information

Historian Data Collectors

Data Collectors are the interface between a data source and the data archiver. They:

- Collect data using a specific acquisition interface, such as iFIX EDA, OPC Alarms and Events, Machine Edition View, OSI PI, or OPC 1.0 or 2.0.
- Perform first level data compression (deadband/update by exception).
- Buffer data (store and forward) whenever a server connection is lost.

Refer to the Historian Data Collectors manual for more information.

Historian File Collector

File Collectors import .CSV or .XML files into Historian. The files can contain data, tagnames or other configuration information, and messages that you can import with a File Collector.

Refer to the Historian Data Collectors manual for more information.

Historian Server

An Historian Server performs the following tasks:

- Manages all system configuration information.
- Manages system security, audit trails, and messaging.
- Services write and read requests from distributed clients.
- Performs final data compression.
- Manages archive files.

Historian Administrator

An Historian Administrator provides a graphical user interface for performing Historian maintenance functions including:

- Tag configuration.
- Maintaining and backing up archive files.
- Data collector configuration.
- Security configuration.
- Controlling data collectors.
- Searching and analyzing system alerts and messages.

Refer to the Using the Historian Administrator manual for more information.

Excel Add-In

The Historian Excel Add-In is a very useful tool for presenting and analyzing data stored in archive files. Using this tool, you can design custom reports of selected data, automatically process the information, and analyze the results. You can also use it for performing tag maintenance functions in Historian, such as adding tags, importing or exporting tags, or editing tag parameters.

Refer to the Using the Historian Excel Add-In manual for more information.

Historian OPC HDA Server

The Proficy Historian OPC HDA Server reads the raw data stored in Historian and sends it to the interested OPC HDA clients. The Proficy Historian OPC HDA Server is in compliance with OPC Server HDA 1.20 standards.

Refer to the Historian OPC HDA Server manual for more information.

NOTE: Proficy Historian OPC HDA Server supports only synchronous read raw interface in this release.

Historian User API

The Historian User API is intended to provide high speed read/write access to Historian data and read access to Historian tags. There is no access to collectors, archives, alarms, events, or messages.

Use the API to develop applications, which read and write data to the Historian server when the Historian SDK and Historian OLEDB do not meet your project requirements for performance or programming language.

Refer to the ihUserApi Help system for more information

Historian SDK

The Software Development Kit (SDK) is designed for writing Visual Basic (VB) or Visual Basic for Applications (VBA) Scripts. Using the SDK, you can develop your own scripts to perform selected repetitive or complex tasks or to make your own custom user interface. To use the SDK, create a VB/VBA project with the SDK as a project reference.

Refer to the SDK Help system for more information.

Historian Migration Tools

Historian provides migration tools to allow you to migrate your existing Classic and Advanced Historian configurations and data and your iFIX Alarm and Event data into the Historian environment. Previous Historian configurations established tags, collection groups, collection rates, and deadbands for tags collected into each Historian. These tags and collection rates are transferred into Historian by the migration tools.

Refer to the Migrating Advanced and Classic Historian Data manual for more information.

Understanding the System Architecture

You have wide flexibility in configuring your Historian application. Since Historian can support a fully distributed architecture, you can spread the data collection, server, administration, and client data retrieval functions across many different nodes in a network, or you can install all components on a single computer.

Since the Historian API is the basic building block for connectivity, all Historian functions, including data collection, administration, and data retrieval, use the Historian API.

You can connect the Historian API to a local Historian Server in the same manner as to a remote Historian Server by simply providing the name of the server. This name must be the Computer Name or IP Address of the target Historian Server, and the server must have TCP/IP connectivity. If you use the Computer Name of the server rather than the IP

Address, the IP Address must be available to the client through DNS, a WINS server, or through the local host table.

It is recommended that you install the Historian Server on a central dedicated server, as shown in the Typical Historian System figure. Next, install data collectors on each data source, and point them back to the central Historian Server by specifying the appropriate server Computer Name. Install a separate data collector for each type of collection interface used in your system.

Observe the following constraints when you install collectors:

iFIX Collector, File Collector, Simulation Collector, Calculation Collector, or Server-to-Server Collector – install only one collector of each type per computer.

OPC Collectors – install only on a computer where the OPC Server is running locally. You can install multiple collectors on a single computer, however, by installing a collector for each OPC Server.

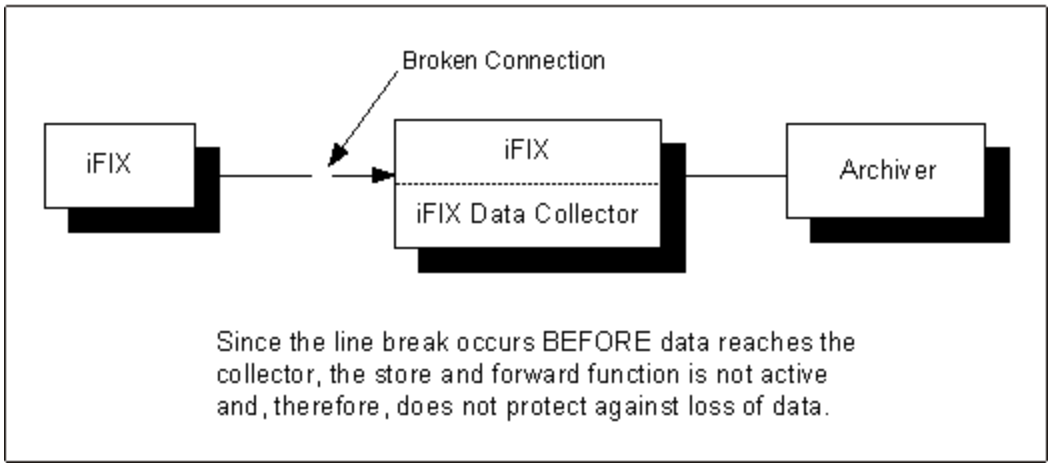
Mixed Collectors – you can install various types of collectors on a single computer, subject to the preceding constraints.

iFIX Implementation Guidelines

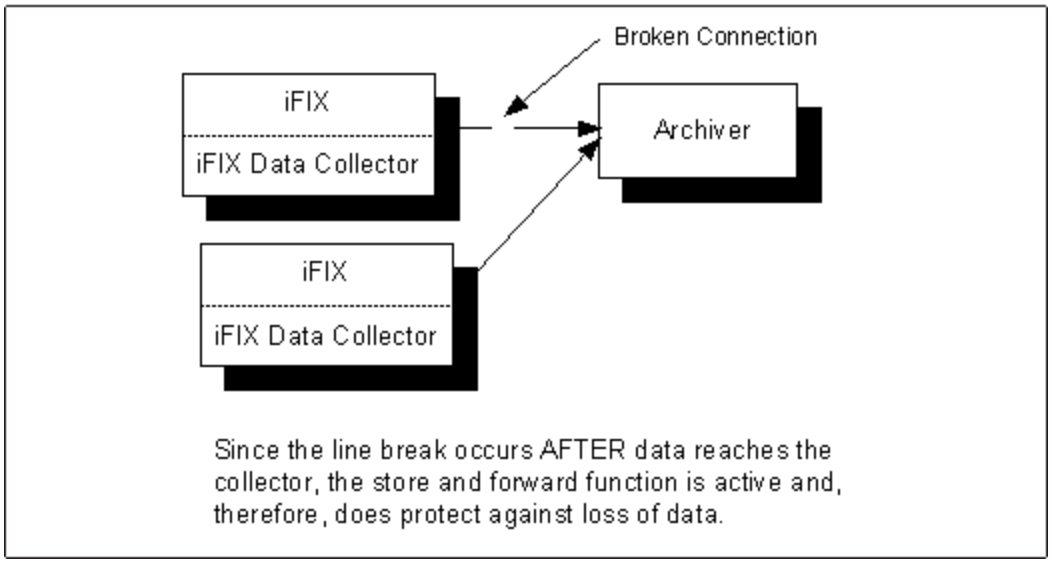
With an iFIX implementation, install data collectors on each SCADA Server that contains the Node.Tag.Fields (NTFs) you want to collect. You can minimize system load in this way because you are not relying on FIX networking to pull remote data into the node where the collector is running.

In a distributed environment, remote data collectors automatically buffer collected data in the event of loss of a network connection between the collector and the Historian Server. When the network connection is re-established, the data collectors automatically re-establish data flow and forward all buffered data to the server.

The store and forward feature does not apply when you use iFIX networking for data collection. Since iFIX network connections are located ahead of the data collector in the data flow path, the store and forward feature does not protect against loss of data when an iFIX network connection is interrupted, as illustrated in the following figure.


Broken Connection
iFIX
iFIX
iFIX Data Collector
Archiver
Since the line break occurs BEFORE data reaches the collector, the store and forward function is not active and, therefore, does not protect against loss of data.

Ineffective Use of Store and Forward in an iFIX Network


Broken Connection
iFIX
iFIX Data Collector
Archiver
iFIX
iFIX Data Collector
Since the line break occurs AFTER data reaches the collector, the store and forward function is active and, therefore, does protect against loss of data.

Effective Use of Store and Forward in an iFIX Network

Historian Alarm and Event Archiving

Historian's Alarm and Event (A&E) archiving offers the ability to collect A&E data from any OPC-compliant A&E server and store it in an integrated relational database (SQL Server 2008 Express), or to an existing Microsoft SQL server 2005 or SQL Server 2008. Historian Alarm and Event data is associated with the related process data from its source to allow for quick analysis.

For more information, refer to Historian Alarms and Events.

Historian Web Administrators vs. Non-Web Administrators

Historian Web Administrators can run on any client(s) on the Internet (or intranet). They connect to the Historian system through the Administration web site, which you can install with the Historian Server. To support administration through an Historian Web Administrator, you must first install and run the Microsoft Internet Information Server (IIS) 5.1 or above. Once IIS is installed, any remote client with Internet Explorer v6.0 or 7.0 can use the Administration web site. If you installed client tools on your IIS computer, you can use the Administration web site from the server.

You can install the Historian Non-Web Administrator on any computer(s) connected to the Historian Server through the API. With Historian Non-Web Administrators, you do not need to install IIS.

Setting up the Historian Environment

Before you start setting up your Historian environment, identify the computers that will function as your clients, data collectors, administration workstations, and archiver. The following sections outline the setup procedures in detail.

Task Overview

When you are ready to set up your Historian environment, use the following procedure:

1. Set up each computer.

   Use the section Hardware Requirements as a guide, and refer to the user manual that accompanies each computer for detailed setup information.

2. Use a login account with administrator rights so that you can install Historian later.

   Use the section Software Requirements as a guide, and refer to the user manual that accompanies each software product for more detailed setup information.

   NOTES:

   - *Historian 4.0 installer automatically detects and installs 32-bit or 64-bit Historian 4.0 Server based on system architecture.*
   - *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit).*

However, you can read and write data from a 64-bit Historian Server.

3. Set up the network adapters and network software required for each computer.

4. Install the Hardware Key on your Historian Server node only.

   Refer to the section Installing the Hardware Key for instructions on attaching the key to your computer.

5. Disable the Guest account in Windows security if you want to limit authentication to known Windows users only.

Hardware Requirements

For Historian Servers, the minimum hardware requirements are:

- An Intel Core or Xeon 2.4 GHz (or 2GHz Core Duo) or equal AMD CPU with minimum 2 GB RAM for a 32-bit Historian Server and 4 GB RAM for a 64-bit Historian Server.
- A DVD drive.
- 100 MBit TCP/IP-compatible network interface adapter for network communication and certain I/O drivers.
- 80 GB free hard drive space, for the data archives, message files, buffer files, and log files used by the system.

For Data Collector nodes, the recommended minimum hardware requirements are:

- A Pentium 4-based 2.0 GHz or better computer with 1 GB RAM,

- 40 GB of free hard drive space to store buffered data.
- A DVD-ROM drive.
- TCP/IP-compatible network interface adapter for network communication and certain I/O drivers.

For the Microsoft Cluster service, the minimum hardware requirements are:

- An Intel Core or Xeon 3GHz (or 2GHz Core Duo) or equal AMD CPU with minimum 4 GB RAM.
- 80 GB of local free hard drive space.
- 40 GB shared SCSI hard drive (RAID preferred).
- Two 100Mbit TCP/IP-compatible network interface adapters for network communication and certain I/O drivers (one for public network, another for private network).

NOTE: *The configuration of each server added to the cluster must be identical to the other servers in the cluster.*

You determine the size of an Historian Server as a function of the number of tags from which data is collected, the rate of alarm and event collection, and how often you intend to collect the data and how much data you want to keep online. The number of tags is an indicator of the number of concurrent users likely to access the system. The primary factor is server memory requirements; CPU load is a secondary factor. If the number of concurrent users is significantly different from the suggested guidelines, adjust server memory size accordingly.

Use the following parameters to determine the size of the Historian Server.

Recommended Historian Server Configurations*				
Tags	<10K	10K to 100K	100K to 1 Million	1 Million to 2 Million
RAM (GB)	2GB	4GB	64GB	256GB
Disk Size required	80GB	160GB	1TB	4TB
Historian 4.0 Server	32-bit		64-bit	
Processor Type	Xeon, or Intel Core Duo (x86-64) family, or equivalent		Xeon or equivalent	
CPU	Single/Dual/Quad		Quad	
CPU Speed (Ghz)	2.4		2.8	
Operating System	Windows 7 (32-bit) or Windows Server 2008 (32-bit)		Windows Server 2008 R2 (64-bit)	
Storage Type	Internal SATA Drives		Storage Array / SAN Drives	
Years of data online	1 year			

*Above recommended configurations may vary based on years of data online, update rate, data compression setting and other tag configuration parameters.

***NOTES**:*

1. *Proficy Historian Server can run on both 32-bit and 64-bit versions of Windows.*
2. *Maximum supported event rate is 9 million per minute.*
3. *Proficy Historian 4.0 supports Windows XP SP3 (32 bit or 64 bit) operating System. To view the list of supported operating systems, refer to the Software Requirements.*
4. *Proficy Historian supports Intel Pentium 4 or Core Duo based processors as long as they are compatible with the operating systems.*
5. *Proficy Historian does not support Itanium processors.*

Recommended Historian Collector Configurations:

Recommended Historian Collector Configurations*	
RAM (GB)	2GB
Disk Size required	40GB
Historian 4.0 Collectors	32-bit
Operating System	Windows 7 (32-bit) or Windows 7 (64-bit)**

*Historian 4.0 Collectors may use up to 4 GB RAM in a 64-bit Windows operating system.

**Historian 4.0 Collectors work as 32-bit applications on a 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.

NOTES:

1. *RAM and Disk Size required may vary based on the collectors available on the system.*
2. *Recommended number of tags per collector is 20 to 30K.*

For iFIX systems, count each Node.Tag.Field (NTF) as a separate tag when you determine the size of the system. For example, FIX.FIC101.F_CV and FIX.FIC101.B_CUALM (current alarm) both count as tags, even though they are derived from the same iFIX tag.

Use the following parameters to determine the size of the Historian Alarm and Event archiver.

Alarm & Event Rate	**RAM**	**CPU**
1 / minute	1GB	Single
1 / second	2GB	Single
10 / second	2GB	Single
100 / second	4GB	Double

You must have disk storage capacity in the multi-GB range for the many data archive files (typically 500 MB each) and alarms you will generate, especially if you want to keep old data online.

NOTE: *As more applications run simultaneously on a server, performance decreases. Whenever possible, run additional applications on separate computers.*

Hardware Requirements - Proficy Historian on Windows XP

Embedded

The minimum Historian software requirements are:

- A minimum Atom-based 1.6 GHz computer or equivalent.
- A minimum of 1 GB RAM.
- A minimum of 1 GB of free hard drive space.
- Other GE Intelligent products, such as Proficy iFIX, impose additional requirements. Refer to the Important Product Information (IPI) topic in the product's electronic books for specific system requirements. Click the System Req. tab in that product's IPI for details.
- TCP/IP-compatible network interface adapter for network communication and certain I/O drivers. One free, direct-connect USB port. Some touch screens, pointing devices, and I/O drivers require a serial port. Additional ports for I/O hardware should be ordered with the computer.
- SVGA or better color graphics monitor and a 100% IBM-compatible, 24-bit graphics card capable of 800x600 resolution and at least 16 million (16,777,216) colors.
- Two-button mouse or compatible pointing device (such as a touch screen).

  NOTE: *There are risks associated with using a Compact Flash or a similar device as a Primary drive in the Windows XP Embedded environment with the Proficy Historian product and your production data. These types of devices have a lifetime associated with them regarding the number of writes the device is capable of over a lifetime. As such, storing production data on such a device may result in lost data, over the long term. If the system has a physical drive, and not a Compact Flash or a similar device, the production data is affected by this risk.*

Recommended Historian Server Configurations* on Windows XP Embedded	
Tags	<100K
RAM (GB)	2GB
Disk Size required	80GB
Historian 4.0 Server	32-bit
Processor Type	X86-based Intel processors including Intel x86 and Pentium
CPU	Single/Dual/Quad
CPU Speed (Ghz)	2.4
Storage Type	Internal SATA Drives
Years of data online	1 year

Software Requirements

The minimum Historian software requirements are:

- One of the following operating systems, with latest service packs or revisions:

    - Windows 7 Professional (32 or 64 Bit)
    - Windows Vista Professional (32 or 64 Bit)
    - Windows Server 2003 (32 or 64 Bit)
    - Windows Server 2003 R2 (32 or 64 Bit)
    - Windows Server 2008 (32 or 64 Bit)
    - Windows Server 2008 R2
    - Windows XP Professional SP3 (32 or 64 Bit)
    - Windows XP Embedded (32 Bit)

    NOTES:

    - *Historian 4Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit applications on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

    - *Windows Server 2008 (32-bit or 64-bit) and Windows Server 2008 R2 can be installed as either the Full or Server Core installation. Proficy Historian 4.0 does not support on a Windows Server Core installation.*

- Internet Explorer v6.0, 7.0, or 8.0.

- For systems with Historian Web Administrators, Microsoft IIS (Internet Information Server) is required. IIS is not required for Historian Non-Web Administrators.

- Network interface software for network communication. The TCP/IP network

protocol is required.

- One of the following 32-bit or 64-bit SQL Server systems to configure alarm and event archiving:
    - Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition
    - Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2
    - Microsoft SQL Server 2008 Express
- One of the following 32-bit versions of SQL Server to use Historian as a linked server:
    - Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition
    - Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2
    - Microsoft SQL Server 2008 Express

IMPORTANT: *Historian 4.0 does not support 64-bit linked SQL Server.*

- The Historian Excel Add-In requires installation of Microsoft Office XP, Microsoft Office 2003, or Microsoft Office 2007, or Microsoft Office 2010 (32-bit).

- The Historian Web Administrator requires the Java Runtime Environment version 1.6 update 5.

Compatibility

Several GE Intelligent Platforms products work with Proficy Historian. The following is a general set of required versions to work with Historian 4.0.

Product	Required Version
Proficy Portal	3.0 or 3.0 SP1.
CIMPLICITY	8.0 R2 or 8.1. **NOTE:** If you want to use Historian 4.0 with CIMPLICITY 8.0 R2, then it is recommended to uninstall Historian 3.0 client tools and then install Historian 4.0 client tools.
Machine Edition View	5.9 with SP1 or 6.0.
iFIX	5.0 SP2 or 5.1 with SP1. **IMPORTANT:** • iFIX 5.0 SP2 or 5.1 is only supported when Historian 4.0 is installed remotely (that is, not on the same machine where IFIX 5.0 SP2 or 5.1 is installed). • You cannot trend historian data if you have iFIX 5.1 or 5.0 SP2 and Historian 4.0 installed on the same machine. • If you want to use Historian 4.0 with iFIX on a same machine, then you must use iFIX 5.1 SP1
Proficy Pulse	1.0 with SP1.
Plant Apps	4.4.1 or 5.0.

ROC Driver	Version 6.31 is required for use with Historian.
Proficy Workflow	1.0 or 1.2
Proficy Analytic Client	1.0
Proficy Troubleshooter+	1.0

Supported Regional Settings

Historian supports the following regional settings available in the Windows Control Panel:

- Decimal symbol - one character
- Digit grouping symbol
- List separator - one character
- Time style
- Time separator
- Short date style

- Date separator

Time and Date Formatting

Avoid changing the time style or short date style in regional settings to values that are outside of the standard styles provided. Changing these values to non-standard styles may result in improperly formatted times and dates.

Historian supports the following short date formats, some of which may not be available in certain language versions of Windows:

- dd/mm/yy
- dd/yy/mm
- mm/dd/yy
- mm/yy/dd
- yy/dd/mm
- yy/mm/dd

Supported Data Types

The following table lists the supported Historian data types and their sizes:

Data Type	Size
Single Float	4 bytes
Double Float	8 bytes
Single Integer	2 bytes
Double Integer	4 bytes
Fixed String	Configured by user.
Variable String	No fixed size.
Binary Object	No fixed size. Historian does not support the use of the Binary Object data type with the Data Collectors. Refer to the SDK online Help for more information on working with BLOB data types.

Scaled	2 bytes

The Hardware Key

You are required to use a hardware key to run Historian Server. The hardware key:

- Enables software options available to your installation, as requested by you.
- Can be electronically reprogrammed using an upgrade utility, as requested by you. Consequently, you are no longer required to exchange hardware keys for version updates or option changes.
- Protects against illegal duplication of Historian software.

Additionally, two hardware keys are offered: one that supports parallel port configurations, and one that supports USB port configurations.

Historian runs in demo mode (one user, 100 tags) if the key is not installed.

NOTE: *File the packing slip that came with the hardware key in a safe place. The codes on this slip are necessary to quickly duplicate the key in case it is damaged or misplaced.*

Installing the Hardware Key

To install the hardware key:

1. Power off the computer and all peripheral devices prior to installing the hardware key; it is sensitive to static electricity.
2. Remove any connections to your computer's parallel port.

3. Secure the hardware key in the parallel port and tighten the screws.

   IMPORTANT: *Do not remove the hardware key from your node while Historian Server is running. If you do remove the key while running, the server will shut down when the next key check is performed, which occurs every two hours. When no key is attached, Historian defaults to demo mode. When you exceed the demo mode defaults of one user connection and 100 tags, the Historian Data Archiver stops; this is intended licensing behavior.*

4. If you had any equipment connected to your parallel port, connect it to the back of the hardware key. If you are using a USB port for the hardware key, you cannot plug any other equipment into the port. Use another port for any additional equipment connections you may need.

The number of tags and clients that you are licensed to use appears in the System Statistics screen of the Historian Administrator. If the Licensed Tags field displays 100 tags and the Licensed Users field displays 1 client, ensure that you have correctly installed your hardware key.

Disabling Guest Accounts

Whether or not you use Historian security, make sure that you disable Guest accounts on your computer. It is recommended that you disable Guest accounts so that Historian operates in the most secure environment, limiting the users to known Windows users.

Optimizing Virtual Memory

Through the use of paging files, Windows allocates space on your hard drive for use as if it were actually memory. This space is known as virtual memory. Be sure to optimize the virtual memory on the Historian archiver computer. The following list describes how to optimize virtual memory in Windows to achieve maximum performance from Historian.

To optimize the virtual memory paging file for Historian in Windows:

1. Double-click the System icon in the Windows Control Panel.

2. Open the Performance Options:

   - On Windows XP or Server 2003; click the Advanced tab, under Performance, click Settings. In the Performance Options dialog box, click the Advanced.

   - On Windows Vista, Windows 7, or Windows Server 2008; click Advanced System Settings In the left pane. On the Advanced tab, under Performance, click Settings. In the Performance Options dialog box, click the Advanced Tab.

3. In the Virtual Memory group box, select Change.

4. In the Initial Size field, enter a value equal to three times your physical memory.

5. In the Maximum Size field, enter a value equal to three times your physical memory.

6. Select Set.

7. Click OK to save the changes and exit the dialog box

NOTE: *If the paging file is set to grow dynamically, your system may experience severe performance problems during run time. To ensure optimal performance, be sure that the Initial Size and Maximum Size of the paging file are the same so that the paging file does not grow dynamically. For more information on creation and sizing of Windows paging files, refer to the Microsoft Windows Help.*

Using a Remote SQL Server

If you have chosen to connect Historian to a remote SQL Server, you must ensure the following conditions are met:

- The Historian Alarm Archiver service must be run on a user account that has privileges to log into the SQL Server using Windows Authentication
- The remote connections for SQL Server 2005 Express or SQL Server 2005 Developer Edition must be enabled. For more information about enabling remote connections, refer to Microsoft's website: http://support.microsoft.com/kb/914277
- The Default Backup Path, found on the Archive screen, must be a shared directory that is accessible to both the Historian Data Archiver and the remote SQL Server. It is recommended that this shared directory be placed on the same computer as the Historian Data Archiver service.

Installing Internet Information Server (IIS)

For an Historian Web Administrator client to communicate with the Server, you must install Microsoft Internet Information Server (IIS) on the Server.

IMPORTANT: *You must install IIS before installing Historian.*

Installing Internet Information Services

To install IIS on Windows XP Professional SP3 or Windows XP Embedded:

1. Open the Control Panel.
2. Click Add/Remove Programs.
3. Click Add/Remove Windows Components.
4. Select Internet Information Services (IIS).
5. Click the Details button. The Details dialog box appears.
6. Select the Internet Information Services Snap-In and World Wide Web Server options.
7. Click OK.

8. Click Next to proceed to the Configuring Components phase.

9. When prompted, insert the Windows XP Professional SP3 CD or browse to a directory that contains the Windows XP Professional SP3 setup files.

10. Click Finish to complete the installation.

If you need additional assistance in installing IIS, refer to www.microsoft.com.

To install IIS on Windows 2003 Server:

1. Open the Control Panel.

2. Click Add/Remove Programs.

3. Click Add/Remove Windows Components.

4. In the Components list box, click Application Server, then click Details.

5. In the Subcomponents of Application Server list, click Internet Information Services.

6. Click OK.

If you need additional assistance in installing IIS, refer to www.microsoft.com.

To install IIS on Windows Vista or Windows 7:

1. Open the Control Panel.

2. Click Programs and Features, and then click Turn Windows features on or off.

The Windows Features dialog box appears.

3. Select the Internet Information Services -> World Wide Web Services -> Application Development Features -> ASP check box.

4. Click OK.

If you need additional assistance in installing IIS, refer to www.microsoft.com.

IMPORTANT: *In order for the Historian Web Administrator to run on a Vista and Windows Server 2008, you must enable parent paths. To enable parent paths in Windows Server 2008, refer To enable parent paths section.*

To install IIS on Windows Sever 2008 or Windows Server 2008 R2:

1. Open the Control Panel.
2. Click Programs and Features, and then click Turn Windows features on or off. The Windows Features dialog box appears.
3. Click Roles, click Add Roles, and then click Next.
4. In the Roles list, click Internet Information Services, and then click Next.
5. Select Web Server (IIS), click Next. The Add features required for Web Server (IIS) dialog box appears.
6. Click Add required features and click Next.
7. In the Web Server (IIS) pane, scroll to the Role Services section, and then click Add Role Services.
8. On the Select Role Services page of the Add Role Services Wizard, select ASP check box.
9. If the Add role services required by ASP dialog box appear, click Add Required Role Services.
10. On the Select Role Services page, click Next, and then click Install.
11. Click Close.

If you need additional assistance in installing IIS, refer to www.microsoft.com.

IMPORTANT: *In order for the Historian Web Administrator to run on a Vista and Windows Server 2008, you must enable parent paths. To enable parent paths in Windows Server 2008, refer to the To enable parent paths section.*

Configuring IIS to Run 32-bit Applications on 64-bit Windows (IIS 6.0)

When you are using Historian 4.0 on Windows on Windows (WoW) 64-bit operating system, you must enable IIS 6.0 to run Historian Web Administrator.

To configure IIS to run 32-bit applications on 64-bit Windows (IIS 6.0):

1. Open the Command Prompt window. (Click the Start button and then point to Programs, Accessories, and then Command Prompt.)

2. Navigate to the **%systemdrive%\Inetpub\AdminScripts** directory.

3. Type the following command: **cscript.exe adsutil.vbs set W3SVC/AppPools/Enable32BitAppOnWin64**.

4. Press **ENTER**.

Installing Historian Software

Historian provides a single install program on a DVD with options that install each system component. Before running the installation program, define the desired system architecture and determine which components you want to install on each node.

You can now install Proficy Historian 4.0 Server on both 32-bit (x86) systems and 64 bit (x64) systems. Historian 4.0 installer automatically detects and installs a 32-bit or 64-bit Historian 4.0 Server based on the system architecture. However, you can also install Historian Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator on 64-bit Windows operating systems, but Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit applications on a 64-bit Windows operating system using WoW64 mode (Windows-on-Windows 64-bit).

Installing Proficy Historian 64-bit server not only takes a full advantage of all the memory in your 64-bit Windows operating system but also boosts overall Proficy Historian performance, security, and admin responsiveness.

NOTE: *To install a data collector, you must first install the source software. If you have added new source software since installing Historian, you must re-run the Historian install. Keep currently installed components checked when reinstalling Historian. Some components may be restarted when installing new data collectors.*

If you are installing all system components on a single computer, run the single step installer (Historian Installer) on that computer only. If you plan to use multiple computers as server, data collector, administrator, and other clients, run the respective installer (Historian Server, Historian Collectors, or Historian Clienttools) on each computer to install the specific components needed for that computer.

If you are installing system components on a machine with any previous Historian components installed, the Install program automatically detects the already installed components and displays those items as checked in the components screen. Select the new components in addition to the already installed components, and continue through the

upgrade.

Installing the Historian Server

You can install "Proficy Historian 4.0 Server" on both 32-bit x86 systems and 64-bit "x64" systems. Historian 4.0 installer will automatically detect and install 32-bit or 64-bit Historian 4.0 Server based on system architecture.

***NOTE**: If you intend to run all components (Historian Server, Collectors, and Client tools) on a single computer, click Historian Installer on the splash screen and proceed with the installation wizard.*

If you plan to use Historian Web Administrators with your system, you must first install Microsoft IIS. Refer to Installing Internet Information Services section for the recommended installation procedure. If you do not plan to use Historian Web Administrators, you do not need to install IIS.

***NOTE:** If you intend to run all components (Historian Server, Collectors, and Client tools) on a single computer, click Historian Installer on the splash screen and proceed with the installation wizard.*

***IMPORTANT**: If you choose to install the Alarm and Event Archiver then you must restart your computer to complete the SQL Server Express 2008 and Plant Database installations.*

To install the Historian Server:

1. Log in to Windows with Administrator privileges. Ensure that there are no Historian or GE Intelligent Platforms processes running, and close any other programs that are running.

2. At the computer you select as the server, insert the Historian DVD. The Historian splash screen appears.

NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed.*

IMPORTANT:

- *When you are installing Proficy Historian on Windows Vista, Windows 7, Windows Server 2003, or Windows Server 2008, you must run the installer as an administrator. To run the installer as an administrator, right-click the InstallFrontEnd.exe and click* ***Run-as administrator****.*
- *You must have administrator privileges before using the* ***Run-as administrator****.*

3. Click the **Historian Installer** link. A message box appears asking you to confirm the install.
4. Click Run to proceed. The install program starts and the Welcome screen appears.
5. Click Next to proceed. The License Agreement screen appears.
6. Click Yes to continue. The Select Features screen appears.
7. Select the components that you want to install, and then click Next. The Windows Firewall screen appears.
8. Select Yes, and then click Next.
9. If you choose to install the Alarm and Event Archiver then you must specify the SQL Server details, and then click Next. Refer to the Historian Alarm and Event SQL Configuration for more information on how to proceed. The Choose the Program Folder screen appears.

10. Accept the default destination folder or browse for a new location, and then click Next. The Choose the Log and Buffer Folder screen appears.

    NOTES: *On a 64-bit Windows Operating System:*

    - *The default destination folder for a 64-bit Historian Server is C:\Program Files\Proficy\Proficy Historian\x64\Server directory.*
    - *The default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is C:\Program Files\Proficy\Proficy Historian\x86 directory.*

11. Accept the default Historian Log files and Buffer files folder or browse for a new location, and then click Next. The Choose the Archive Folder screen appears.

    NOTE: *Historian now creates Log files and Buffer files folder inside Data (Archives) and Configuration folder (by default, C:\Proficy Historian Data).*

12. Accept the default Historian Archives folder or browse for a new location, and then click Next. The Configuration Review screen appears.

13. Click Next.

14. Select **Yes, I want to restart my computer now**, and then click Finish to complete the installation.

Log Files Created After You Start Historian for the First Time

When you start collection, the Historian Server creates an archive. It places archive files in the Archives folder specified during installation. By default, this is **C:\Proficy Historian Data\Archives** on both 32-bit and 64-bit Windows operating system. All files with the .IHA extension are Archive data files. The file with the .IHC extension contains configuration information.

The archiver and collectors place log files in the Logfiles folder. By default, this is **C:\Proficy Historian Data\LogFiles** on both 32-bit and 64-bit Windows operating system. The Archiver produces two log files, a DATAARCHIVER-XX.LOG file and a DATAARCHIVER.SHW file. Each collector also produces two log files. For example, the Simulation Collector produces these files: SimulationCollector-01.log and SimulationCollector.shw.

You can view log files using Notepad or any other text editor. The .LOG file shows events, warnings, and errors produced by the Archiver during operation; the .SHW file shows current configuration information that applies to the Historian Server.

Installing the Historian Web Administrator

Installing the Historian Web Administrator allows users from any computer with Microsoft Internet Explorer v6.0 or 7.0 installed to access the Web Administrator.

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

You must have IIS installed before attempting to install the Historian Web Administrator. Refer to the Installing Internet Information Server (IIS) section for more information.

NOTE: *When you are using Historian 4.0 on a 64-bit operating system, you must configure IIS to run 32-bit applications on 64-bit Windows. Refer to the Configuring IIS to Run 32 - bit Applications on 64 - bit Windows (IIS 6.0) topic for more information.*

To install the Historian Web Administrator:

1. At the Windows XP Professional SP3, Windows Vista SP1 32-bit (Ultimate , enterprise and business editions), Windows Server 2003 SP2, or Windows Server

2008 32-bit computer you select as the server, insert the Historian DVD and run the Historian Install program. The Historian Install Wizard appears.

2. Select the Administrative Web Site (requires IIS 4.0 or greater) option in addition to any previously installed components. The Historian Server and Historian Client options are automatically selected.

NOTE: *If you are re-running the Historian install, do not unselect previously installed components, as they will be removed from the Historian installation.*

3. Proceed through the installation screens.

Connecting to the Historian Web Administrator

You must have IIS installed before attempting to install the Historian Web Administrator. Refer to the Installing Internet Information Server (IIS) section for more information.

NOTE: *When you are using Historian 4.0 on a 64-bit operating system, you must configure IIS to run 32-bit applications on 64-bit Windows. Refer to the Configuring IIS to Run 32 - bit Applications on 64 - bit Windows (IIS 6.0) topic for more information.*

▸ To connect to the Historian Web Administrator, follow these steps:

1. Open your browser and for the URL, type in http://SERVERNAME/Historian, where SERVERNAME is the computer name running IIS.

2. When the login dialog appears, enter a valid username, password, and domain, if any, for the Historian Server, and click OK. The Historian Administrator Main screen appears.

Installing Historian Non-Web Administrators

You can install an Historian Non-Web Administrator on any node that connects to the Server through an Historian API.

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

To install an Historian Non-Web Administrator:

1. Insert the Historian DVD. The Historian splash screen appears.

   NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed*

2. Click the **Historian Installer** link. A message box appears asking you to confirm the install.

3. Click **Run** to proceed. The install program starts and the **Welcome** screen appears.

4. When the Install Wizard appears, select the **Historian Administrator** option in addition to any previously installed Historian components and then click Next.

The program installs the Historian Non-Web Administrator and any other components associated with it, including the API. If you prefer, you can install the Historian Administrator at the same time you install other options, by selecting all desired options at once

NOTE: *If you intend to run all components (Historian Server, Collectors, and Client*

tools) on a single computer, choose Historian Installer on the splash screen and proceed with the installation wizard.

Starting the Historian Non-Web Administrator

To start the Historian Non-Web Administrator:

1. From the **Start** button in the bottom toolbar, select **Program Files** and then **Proficy Historian 4.0**.

2. Select **Historian Administrator** to open the application.

   As an alternative, you can create a shortcut and start Historian from a desktop icon.

3. Optionally, click on the **Main** link. The login dialog box appears.

4. Optionally, select the server from the drop-down menu, enter your **username**, **password**, and **domain**, if any, and then click **OK**.

The Historian System Statistics screen appears. You can now proceed with all Historian Administrator functions.

***NOTE:** If you leave the **UserName**, **Password**, and **Domain** fields blank and click **OK**, then the login information of the currently logged in Windows user is used.*

Installing Historian Data Collectors

All collectors, except the iFIX and Machine Edition* View collectors, can run as Windows services. If so configured, they will also continue to run after you log out, and can be configured to start when you start your computer. The iFIX Collector, on the other hand,

starts when iFIX starts, and runs after logout if iFIX is so configured. The Machine Edition View collectors start when their associated Machine Edition project is started.

You can install only one Server-to-Server Collector and one Calculation Collector per computer.

NOTE: *Historian data collectors must be installed after the source software has been installed. For example, the iFIX SCADA software must be installed before the iFIX collector. Wherever possible, data collectors should be installed on the same machine as the data source, to take maximum advantage of collector buffering.*

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

Steps to Install Data Collectors

NOTE: *If you intend to run all components (Historian Server, Collectors, and Client tools) on a single computer, click* ***Historian Installer*** *on the splash screen and proceed with the installation wizard.*

To install Historian Data Collectors:

1. Insert the Historian DVD. The Historian splash screen appears.

   NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed.*

2. Click the **Historian Collectors** link. A message box appears asking you to confirm the install.

3. Click Run to proceed. The install program starts and the Welcome screen appears.

4. Select the appropriate type of Data Collector in addition to any previously installed Historian components, and then click Next. The Choose the Program Folder screen appears.

5. Accept the default destination folder or browse for a new location, and then click Next. The Historian Server Name screen appears.

   NOTE: *On a 64-bit Windows Operating System, the default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is C:\Program Files\Proficy\Proficy Historian\x86 directory.*

6. Enter the Historian Server name to be used, and then click Next. The Configuration Review screen appears.

7. Click Next.

8. Select **Yes, I want to restart my computer now**, and then click Finish to complete the installation.

NOTE: *The collector will not appear in the Historian Administrator until after the collector has been started.*

Installing the Historian Excel Add-In

You can install the Excel Add-In on any client or server on which the API has been installed.

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

NOTE: *If you intend to run all components (Historian Server, Collectors, and Client tools) on a single computer, click* ***Historian Installer*** *on the splash screen and proceed with the installation wizard.*

To install the Excel Add-In:

1. Verify that Microsoft Excel is installed on your computer.

2. Insert the Historian DVD. The Historian splash screen appears.

   NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed.*

3. Click the **Historian Excel Add-in** link. A message box appears asking you to confirm the install.

4. Click Run to proceed. The install program starts and the Welcome screen appears.

5. Click Next to proceed. The License Agreement screen appears.

6. Click Yes to continue. The Select Features screen appears.

7. Select the component you want to install, and then click Next. The Choose the Program Folder screen appears

8. Accept the default destination folder or browse for a new location, and then click Next. The Historian Server Name screen appears.

   NOTE: *On a 64-bit Windows Operating System, the default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is C:\Program Files\Proficy\Proficy Historian\x86 directory.*

9. Enter the Historian Server name to be used, and then click Next. The Configuration Review screen appears.

10. Click Next.

11. Select **Yes, I want to restart my computer now**, and then click Finish to complete the installation.

If you prefer, you can install the Excel Add-In at the same time you install a data collector or server. The Add-In must be enabled in Excel before you can use it. To enable the Excel Add-In, refer to Installing the Excel Add-In with Historian in the Using the Historian Excel Add-In manual.

Installing the Historian Client Tools

NOTE: *If you intend to run all components (Historian Server, Collectors, and Client tools) on a single computer, click* ***Historian Installer*** *on the splash screen and proceed with the installation wizard.*

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

To install the Client Tools:

1. Insert the Historian DVD. The Historian splash screen appears.

   NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed.*

2. Click the **Historian Client Tools** link. A message box appears asking you to confirm the install.

3. Click Run to proceed. The install program starts and the Welcome screen appears.

4. Click Next to proceed. The License Agreement screen appears.

5. Click Yes to continue. The Select Features screen appears.

6. Select the component that you want to install, and then click Next. The Choose the Program Folder screen appears.

7. Accept the default destination folder or browse for a new location, and then click Next. The Historian Server Name screen appears.

   NOTE: *On a 64-bit Windows Operating System, the default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is* ***C:\Program Files\Proficy\Proficy Historian\x86*** *directory.*

8. Enter the Historian Server name to be used, and then click Next. The Configuration Review screen appears.

9. Click Next.

10. Select **Yes, I want to restart my computer now**, and then click Finish to complete the installation.

Installing the Historian HDA Server

IMPORTANT: *You must install Historian Non-Web Administrator to set up the Proficy Historian OPC HDA Server.*

IMPORTANT: *Historian 4.0 Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit application on 64-bit Windows operating systems using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.*

You can install the Proficy Historian OPC HDA Server on any server on which the Proficy Historian Server has been installed.

1. Insert the Historian DVD. The Historian splash screen appears.

   NOTE: *If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning; click Run to proceed.*

2. Click the **Historian Installer or Historian Client Tools** link. A message box appears asking you to confirm the install.

3. Click Run to proceed. The install program starts and the Welcome screen appears.

4. Click Next to proceed. The License Agreement screen appears.

5. Click Yes to continue. The Select Features screen appears.

6. Select the component you want to install, and then click Next. The Choose the Program Folder screen Appears.

7. Accept the default destination folder or browse for a new location, and then click Next. The Historian Server Name screen appears.

   NOTE: *On a 64-bit Windows Operating System, the default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is C:\Program Files\Proficy\Proficy Historian\x86 directory.*

8. Enter the Historian Server name to be used, and then click Next. The Configuration Review screen appears.

9. Click Next.

10. Select **Yes, I want to restart my computer now**, and then click Finish to complete the installation.

NOTE: *When the HDA Server option is selected, then the Historian install wizard will install Microsoft .NET Framework 3.5 and OPC Core Components 3.00 redistributable during the installation process.*

Installing Historian SDK

If you need to create customized programming for the Historian Server, use the Historian Software Development Kit (SDK) with Visual Basic or any application that provides a VBA programming interface, such as iFIX, Microsoft Excel or Microsoft Word. The Install Wizard places the Historian Software Development Kit (SDK) in the System32 directory and automatically registers it. To use the SDK, set up a project reference with the Historian Software Development Kit.

Uninstalling Historian and Historian System Components

To remove all Historian System information from your computer:

1. Double-click the Add/Remove Programs icon in the Control Panel. The Add/Remove Programs dialog box opens.

2. Select Proficy Historian 4.0, and click the **Remove** button.

a. To uninstall Historian and save the current Historian configuration and data, select **Do Not Delete Archives,** and then click **Next**.

b. To uninstall Historian and delete the current Historian configuration and data, select **Delete Archives,** and then click **Next**.

c. To abort the uninstall, select **Cancel Uninstall,** and then click **Next**.

3. The uninstall proceeds and all Historian components are removed.

For information on uninstalling OPC Data Collectors, refer to the Modifying and Uninstalling OPC Collectors section of the Historian Data Collectors manual.

Upgrading from a Previous Release

Before upgrading Historian, it is recommended that you follow these steps:

- Stop the Historian Data Archiver service.
- Backup all archive data files (*.iha), configuration files (*.ihc) and backup files. By default in Proficy Historian 3.5 or earlier, you can find these files in the ***C:\Program Files\GE Fanuc\Proficy Historian\Archives*** folder.
- Optionally, use the Excel Add-In to export your tag configuration for all tags. It is recommended that you export tags associated with each collector on a separate worksheet.
- If you are using Microsoft Excel 2000, then you must upgrade to Microsoft Excel 2003 or above.
- If you are using a SQL Server 2000 database, then you must:

  - Stop the Historian Services including the Alarm Archiver service.
  - Upgrade to SQL Server 2005 or higher before upgrading Historian.
  - Upgrade to Historian 4.0. During the Install process provide the valid connection information to the SQL Server 2005 or SQL Server 2008.

- If you are using MSDE database, then Historian 4.0 Installer will install SQL Server Express 2008 and migrate the MSDE data into SQL Server Express 2008 automatically.
- Shut down the DEP (Data Execution Protection) feature. One way to do this is from the Control Panel, access the System Properties. Select the Advanced tab, and click the Settings button in the Performance area. On the Data Execution Protection tab, select the "Turn on DEP for essential Windows programs and services only" check box.

NOTE: *If you choose to upgrade to Historian 4.0, then you must upgrade your Historian 3.1 license key to Historian 4.0 license key.*

Uninstalling the old Historian Product

You can uninstall the old Historian product before installing the new Historian, but you do not have to. If you choose to uninstall, make sure that you remove all Historian SIMs before uninstalling the old Historian product.

If you uninstall the old Historian product, you do not need to remove any Historian archives, unless you want to. When you use the **Windows Add Remove Programs** wizard to uninstall Historian, a message box appears asking if you want to remove the archives. If upgrading, select the **Do Not Delete Archives and Continue** option and click **Next** to continue with the uninstall.

Installing the new Historian Product

If you chose to uninstall Historian first, make sure you restart your computer before installing the new Historian. For the steps on how to install Historian, refer to the section at beginning of this chapter, Installing Historian Software.

NOTE: *If you have uninstalled a previous version of Proficy Historian and did not remove the archives, ensure you direct the new Historian to the previous install folder (for example c:\Program Files\GE Fanuc\Proficy Historian\Archives\) so that the Historian install program will find the existing archives and configuration file.*

The default installation folder will now reflect the new Proficy name. By default, Proficy Historian 4.0 installs to:

C:\Program Files\Proficy\Proficy Historian\

The archives, log files, and buffer files get installed to these locations:

C:\Proficy Historian Data\Archives\

C:\Proficy Historian Data\BufferFiles\

C:\Proficy Historian Data\LogFiles\

The help files get installed to:

C:\Program Files\Proficy\ProficyDoc\1033\Historian\

Proficy Historian Server supports 64-bit environment. For a 64-bit environment, this support covers the native 64-bit Historian server. You can also install Historian Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator on 64-bit Windows operating systems, but Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator work as a 32-bit applications on a 64-bit Windows operating system using WoW64 mode (Windows-on-Windows 64-bit). However, you can read and write data from a 64-bit Historian Server.

On a 64-bit Windows Operating System:

- The default destination folder for a 64-bit Historian Server is C:\Program Files\Proficy\Proficy Historian\x64\Server\ directory.
- The default destination folder for all 32-bit components (such as collectors, client tools, and APIs) is C:\Program Files\Proficy\Proficy Historian\x86 directory.
- The default archives, log files, and buffer files get installed to C:\Proficy Historian Data\.
- The help files get installed to C:\Program Files\Proficy\ProficyDoc\1033\Historian\.

When you are upgrading Historian 3.5 or earlier and if you did not remove the archives, ensure you direct the new Historian to the previous install folder (for example, C:\Program Files\GE Fanuc\Proficy Historian\Archives\) so that the Historian install program will find the existing archives and configuration file.

NOTE: *On a 64-bit Windows Operating System, all 32-bit components (such as collectors, client tools, and APIs) related registry keys will be located under HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\\Intellution, Inc.\iHistorian\.*

Upgrading the Historian SDK

If you want to run an SDK program that you created with an older version of Historian on a newer version, you must first rebuild the program on a computer with an older version installed. You cannot run an SDK application built on an Historian node on a node running an older version of the software.

Interoperability of Historian Versions

Interoperability guidelines for Historian versions include:

- Historian Collectors below v4.0 can write to Historian v4.0 Archivers.
- Historian Clients below v4.0 can retrieve data from Historian v4.0 Archivers.
- Historian v4.0 Clients can retrieve data from Historian Archiver below v4.0.
- Historian v4.0 Collectors can write to Historian Archivers below v4.0.
- An SDK program built on an Historian v4.0 node does not run on an Historian below v4.0.
- An SDK program that you created in Historian below v4.0 must be rebuilt on the Historian v4.0 computer if you want to run it on the v4.0 computer.
- In general, it is recommended that you use consistent versions of client and server applications. If you do use different client and server versions of the Historian, it is recommended to regularly back up all archives and tag configurations.

  NOTE: *To determine the version of the server, client, and SDK, click on the About link in the Historian Administrator.*

Troubleshooting

FAQ About Upgrading to Historian 4.0

Question	Answer
How do I upgrade Historian 3.1 SP1or above to Historian 4.0?	You can upgrade Historian 3.1 SP1 or above using the Historian 4.0 full installer only.
How do I upgrade Historian versions earlier than 3.1 SP1 to Historian 4.0?	You must un-install the version earlier than Historian 3.1 SP1, and then install Historian 4.0.
How do I upgrade Historian 3.0 or 3.1 which is installed on Windows 2000 or Windows XP SP2 operating system?	You must upgrade to Windows XP Professional SP3, Windows Server 2003 SP 2, Windows Vista SP1 32-bit (Business, Ultimate, and Enterprise), Windows Server 2008-32 bit, or Windows 2008 Server 64bit Edition (WoW64). ***NOTE:*** *Historian is not supported on Windows 2000 or Windows XP operating system.*
How do I upgrade Historian 3.0 or later, which contains FIX32 and CIMPLICITY native collectors?	You must un-install Historian 3.0 or later, which contains FIX32 and CIMPLICITY native collectors, and then install Historian 4.0. ***NOTE:*** *Historian 4.0 does not support FIX32 and CIMPLICITY native collectors*.
How do I upgrade Historian 3.0 or 3.1 which	You must install Microsoft Excel 2003 or later and

uses Microsoft Excel 2000?	then install Historian 4.0. ***NOTE:*** *Historian 4.0 does not support Microsoft Excel 2000.*
How do I upgrade Historian 3.0 or 3.1 which uses SQL Server 2000 database?	If you are using a SQL Server 2000 database then you must: • Stop the Historian Services including the Alarm Archiver service. • Upgrade to SQL Server 2005 or higher before upgrading Historian. • Upgrade to Historian 4.0. During the Install process provide the valid connection information to the SQL Server 2005 or SQL Server 2008. ***NOTE:*** *Historian 4.0 does not support SQL Server 2000.*
Do I need to install SQL Server Express 2008 and then migrate MSDE data into SQL Server Express 2008?	Historian 4.0 Installer will install SQL Server Express 2008 and migrate the MSDE data into SQL Server Express 2008 automatically.
How do I upgrade Historian 3.0 or later, which contains server, collectors, and client tools	You must use Historian 4.0 full installer only.

using components installer; for example, collectors only or client tools only, or excel add-in only installers?	
How do I upgrade Historian 3.0 or later Collectors using Historian 4.0 Collectors only install?	You must use either Historian 4.0 full installer or Collectors only installer to upgrade. ***NOTE:*** *If an individual component (for example, collectors only or client tools only, or excel add-in only) of Historian 3.1 is installed on a machine, then you must use either Historian 4.0 full installer or an individual component installer to upgrade.*
Does Historian 4.0 supports Proficy Historian Server in native 64-bit?	Yes. You can install "Proficy Historian 4.0 Server" on both 32-bit x86 systems and 64 bit "x64" systems. Historian 4.0 installer will automatically detect and install 32-bit or 64-bit Historian 4.0 Server based on system architecture.
Does Historian 4.0 supports Historian Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator in native 64-bit?	No. You can install Historian Collectors, Client tools, APIs, Non-Web Administrator, and Web Administrator on 64-bit Windows operating systems, but they work as a 32-bit application on a 64-bit Windows operating system using WoW64 mode (Windows-on-Windows 64-bit).

Does Historian 4.0 support 64 bit SQL server?	Yes, one of the following 32 bit or 64 bit SQL Server systems to configure alarm and event archiving: • Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition. • Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2. • Microsoft SQL Server 2008 Express.
Does Historian 4.0 support 64 bit SQL linked server?	No. You must use one of the following 32 bit versions of SQL Server to use Historian as a linked server: • Microsoft SQL Server 2008 Standard, Professional, or Enterprise Edition. • Microsoft SQL Server 2005 Standard SP2, Professional SP2, or Enterprise Edition SP2. • Microsoft SQL Server 2008 Express.
Does Historian 4.0 support 64-bit Microsoft Excel Add-In?	No. Historian Excel Add-In requires installation of Microsoft Office XP, Microsoft Office 2003, or Microsoft Office 2007, or Microsoft Office 2010 (32-bit).
Can I create 64-bit SDK applications?	No.

Can I use User API applications (such as, CollectorLike, PlotLike, ReportLike, and MigrationLike) to read and write data to a 64-bit Historian server?	Yes. Historian allows you to use the User API applications (such as, CollectorLike, PlotLike, ReportLike, and MigrationLike) to read and write data to a 64-bit Historian server.
Can I write 64-bit Visual Basic ado applications to OLEDB?	No.

Startup Procedure Overview

To install and start up Historian in the shortest possible time:

1. Define your system architecture.

Decide what collectors to install on which nodes, what computers to designate as the Historian Server and the Historian Administrators, whether or not they will be web-based, and how much memory and disk space you can assign to buffers and archives. Record the computer names of each node.

2. Ensure that iFIX and other data sources are installed.

3. Set up your Historian environment. (Refer to Chapter 2.)

4. If you plan to use web-based Administrators on a Windows XP Professional, 2003 Server system, or 2008 Server system, install Microsoft Internet Information Server (IIS), and install Internet Explorer 6 or 7 on web based clients. (Refer to

Chapter 3.)

5. At the server node, power off the computer, plug the Hardware Key into the parallel port or USB port, and restart. (Refer to Chapter 2.)

   IMPORTANT: *For USB keys, skip step 5, and proceed to install the Historian product software. After installing the Historian, software then you can plug in the key.*

6. At the server node, insert the Historian DVD and select Historian Install. Respond to prompts, selecting Historian Server for installation. If you want other items installed on the Server, select them at the same time as the Historian Server.

   NOTE: *If you forget to add a component and re-run the install do not unselect previously installed components as they will be uninstalled.*

7. Install collectors where needed.

   - **iFIX** – Select the Historian iFIX Collector to collect data and/or the iFIX AE Collector to collect alarms and events. When prompted, type in the name of the Historian server as the destination for archived data.

   - **FIX** – Select the Historian iFIX Collector to collect data. When prompted, type in the name of the Historian server as the destination for archived data.

   - **CIMPLICITY HMI** – Select the CIMPLICITY HMI collector to collect data. To collect alarms & events, select the OPC AE Collector and when prompted select the CIMPLICITY OPC AE server (CIMPLICITY.HMI.AESvr.1). When prompted, type in the name of the Historian server as the destination for archived data.

   - **OPC Alarms & Events** – To collect data from an OPC AE server select

the OPC AE collector and when prompted select the name of the OPC AE server.

- **OPC Data** – To collect data from an OPC v1.0/2.0 server select the OPC Data collector and when prompted select the OPC data collector from the list provided.

- **Calculation** – To install a calculation collector select it from the list of options and when prompted type in the name of the Historian server as the destination for the calculated values

- **Server-to-Server** – Select the Server-to-Server collector to collect data from one Historian server ("Source") and store it on another ("Destination"). When prompted, type in the name of both the source and destination Historians.

- **OSI PI** – Select the OSI PI collector to collect data from an OSI PI node and store it in the Historian. Select the OSI PI Distributor to collect data from the Historian server and store it on an OSI PI node. When prompted, type in the name of the OSI PI and Historian servers

8. Restart your computer if prompted to.

If your collector services are not configured for automatic start up, manually start them.

9. At the web-based Administration client(s), run the Internet browser and enter the URL for your server. When the Historian Administrator's main screen appears, you are ready to set up archives, collectors, and tags in the Archive Maintenance, Collector Maintenance, and Tag Maintenance screens. Refer to the Using the Historian Administrator manual for details.

Or, at non-web-based Administration clients, start the Administrator from the Historian

Startup Group. When the Historian Administrator's main screen appears, you are ready to set up archives, collectors, and tags in the Archive Maintenance, Collector Maintenance, and Tag Maintenance screens. Refer to the Using the Historian Administrator manual for details.

NOTE: *Collectors will not appear in the Historian Administrator until they are started.*

Implementing Historian Security

Historian is a high performance data archiving system designed to collect, store, and retrieve time-based information efficiently. By default, access to these Historian archives, tags, and data files is available to any valid operating system user account. In this default environment, all users are allowed to read, write, change, and delete archives, tags, or data files in the Historian Administrator, SDK, Migration Tools, and Excel Add-In. However, you may find that you want to make these functions and data available only to authorized personnel. You can do this by creating and defining Historian Security Groups in your Windows Security.

Historian includes an Electronic Signature and Electronic Records security feature. This option provides installations concerned with the FDA's 21 CFR Part 11 regulation – or any site interested in added security or tracking – the ability to require a signature and password every time a change in data or configuration is requested. For more information on the Electronic Signature and Electronic Records feature, refer to the Using Historian in a Regulated Environment section of the Using the Historian Administrator manual.

Whether or not you use Historian security, make sure that you disable Guest accounts on your computer to limit access to valid Windows user accounts.

Protecting Your Process

If you want to restrict access to Historian archives, files, and tags, or protect your data files from unauthorized changes, you can enable Historian security. Using security is optional and is disabled by default. By enabling security, you can restrict access to the following:

- Modifying data using the Excel Add-In
- Updating security for individual tags or groups of tags

- Creating, modifying, and removing tags

Tag protection (adding, modifying, removing, and so on) can be applied at a global level to all tags or at the individual tag level. Refer to Implementing Tag Level Security for more information.

- Reading data in the iFIX Chart object, Excel Add-In, and Migration Utilities
- Writing data
- Starting and stopping collectors
- Creating and deleting collectors
- Creating, modifying, and deleting archives

Historian uses the operating system security groups to create a security structure. You enable security for a particular set of functions by adding specific Historian Security Groups to your groups. You can also add security groups to your domain controller. Refer to Security Tab section in the Historian Administrator Manual for information on selecting local or domain security groups.

By defining one or all of the groups, you begin to set up a security structure. Refer to the Historian Security Groups section for more information on the Historian Security Groups available.

Creating and Implementing a Security Strategy

When you begin to implement security, you should first define a clear strategy. Consider the following when beginning to set up your security strategy:

- If you disabled the Guest account, a user must provide a valid username and

password even if no groups are created.

- Protection is only provided for the functional areas for which you have built the associated Historian Security Groups.

- If you only choose to define some of the security groups, all users still have all access to any uncreated groups. All users are still assumed to be a member of a group unless that group has been created, with the exception of iH Audited Writers group. You must add the iH Audited Writers group to the Windows security groups so that a user can become a member of this group.

For example, if you elect to define the iH Security Admins group and iH Archive Admins group, both the members associated with those defined groups and all other valid users still have access to such functions as creating and modifying tags until you create the iH Tag Admins security group.

- If you decide to implement any of the Historian Security groups, you should first add and define the iH Security Admins group.

  WARNING: *If you do not create and define the iH Security Admins group, all valid users are assumed to be members of this group. This membership overrides any other security group that you set.*

For more information on the Historian Security Groups available and their security functions, refer to the Historian Security Groups section and the Historian Security Groups table.

Historian Security Groups

The following are the available Historian Security groups:

iH Security Admins – Historian power security users. Security Administrators have rights to all Historian functions. This group also has the ability to change

tag level security, archive security, and modify the Electronic Records and Signatures option. This is the only Historian security group that overrides tag level security.

iH Collector Admins – Allowed to start and stop collectors, browse collectors, configure collectors, and add new collectors.

iH Tag Admins – Allowed to create, modify, and remove tags. Tag level security can override writes given to other Historian security groups. Tag Admins can also browse collectors.

iH Tag Admins are not responsible for setting Tag Level Security. This task can only be performed by an iH Security Admins. For more information on setting Tag Level Security, refer to the Implementing Tag Level Security section.

iH Archive Admins – Allowed to create, modify, remove, backup, and restore archives.

iH UnAudited Writers – Allowed to write data without creating any messages.

iH UnAudited Logins – Allowed to connect the DataArchiver without creating login successful audit messages.

iH Audited Writers – Allowed to write data and to produce a message each time a data value is added or changed.

Tag, archive, and collector changes log messages regardless of whether the user is a member of the iH Audited Writers Group.

iH Readers – Allowed to read data and system statistics. Also allowed access to Historian Administrator.

Historian Group Rights

Use the security table that follows to identify which types of user groups you need to create and define in your security system.

Historian Security Groups							
Function	**iH Security Admins**	**iH UnAudited Writers**	**iH Audited Writers**	**iH Readers**	**iH Archive Admins**	**iH Tag Admins**	**iH Collector Admins**
Create Tags: • Excel Add-In • SDK • Historian Administrators • File	**X**					**X**	

Collector							
Remove Tags: • Historian Administrators • SDK • File Collector	**X**					**X**	
Modify Tags: • Historian Administrators • Excel Add-In • SDK • File	**X**					**X**	

Collector							
Modify Archive Security: • Historian Administrators • SDK	**X**						
Backup Archive: • Historian Administrators • SDK	**X**				**X**		
Restore Backup: • Historian Administr	**X**				**X**		

ators • SDK							
Create Archive: • SDK • Historian Administrators	**X**				**X**		
Start/Stop Collector: • SDK • Mission Control (iFIX) • Historian Administrators	**X**						**X**

Browse Collector: • Historian Administrators	**X**						**X**
Read Data: • Chart Object • Excel Add-In • SDK	**X**			**X**			
Write Data (UnAudited): • Excel Add-In • SDK	**X**	**X**					
Write Data (Audited):	**X**		**X**				

• Excel Add-In • SDK							
Modify Data: • Excel Add-In • SDK	**X**	**X**	**X**				
Update Security for Tag: • Excel Add-In • SDK • Historian Administrators	**X**						

Migrate • Migration Tools	**X**						
Login Connection Messages	**X**	**X**		**X**	**X**	**X**	**X**

Security Setup Example

The following example takes you through the process of establishing your security needs and defining and setting up the levels of security.

Example

This example demonstrates how to implement security with Historian, starting with the default open security system.

1. Establish your user needs.

For this example, assume the following user needs in a plant of 14 users:

User	Needs	Added to Security Group
USER1	Power user. Needs total access to security.	iH Security Admins
USER2 USER3 USER5 USER6 USER8	o Read/Write Data (no messages). o Create, modify, and delete tags. o Backup, restore, and create archives.	o iH UnAudited Writers o iH Tag Admins o iH Archive Admins o iH UnAudited Logins
USER4	o Read/Write Data (no messages).	o iH UnAudited

USER7	o Create, modify, and delete tags. o Start/Stop Collectors. o Backup, restore, and create archives.	Writers o iH Tag Admins o iH Collector Admins o iH Archive Admins
USER9-14	Read Data.	o iH Readers

2. Add and define the iH Security Admins Group.

Once you determine that you want to establish a security structure, you must create and define the iH Security Admins group. This group of users is typically the "power users" of the Historian. Security Administrator rights allow them to manage configuration and give them free rein to the entire system. For this example, only USER1 would be added to the iH Security Admins group.

3. Establish and create any other Historian Security Groups as needed.

   NOTE: *Any user with Windows administrative permissions can add or remove Windows groups and users. As such, an administrator on a Windows computer, can add himself to any Historian security group.*

You should then set up the functional security groups as needed. For this example, Write, Tag, Archive, and Collector security is required, so the groups associated with those functions should be added and defined. There is no need for Audited Writers and all valid users can read data, so neither the iH Audited Writers Group nor the iH Readers Group need to be added.

4. Define any individual Tag Level security.

In addition to defining iH Tag Admins that have the power to create, modify, and remove tags, you can also define individual tag level security to restrict access to sensitive tags. You can grant read, write, or administrative privileges per tag. For more information on setting Tag Level security, refer to the Implementing Tag Level Security section.

Setting up Historian Security Groups

This section describes how to add the Historian Security Groups to your local and domain Windows security systems.

You can choose whether Historian uses LOCAL or DOMAIN security by selecting an option on the Security Tab of the Archive Maintenance screen in the Historian Administrator. If you select the local security option, the groups are defined as local groups on the Historian Server. If you select the Domain security option, the groups are defined as global groups in the primary domain controller of the Historian Server. With domain security, Historian locates the Primary Domain Controller (PDC), if available, or a Backup Domain Controller (BDC) in order to establish groups. If the PDC and all BDCs are unavailable, the system locks all users out until rights can be established with a valid PDC or BDC.

NOTE: *If you change this setting, you must stop and re-start the Historian Server for this change to take effect.*

Setting Local Groups on Windows Systems

The following procedures applies setting local groups on a Windows XP® Professional with Service Pack2 or 3 (32-bit); Windows Vista® (32-bit and 64-bit); Windows Server® 2003, 2008, and 2008 R2; or Windows 7 (32-bit and 64-bit).

To create a new local group:

1. Open the Control Panel.

2. Double-click the Administrative Tools icon.

3. Double-click the Computer Management icon. The Computer Management console opens.

4. Select Groups from the Local Users and Groups folder in the system tree.

5. From the Action menu, select New Group. The New Group dialog box appears.

6. Enter the Historian Security Group name in the Group Name field. For a list of available Historian Security Groups and their functions, refer to the Historian Security Groups section.

   IMPORTANT: *You must enter the Historian Security Group name exactly as it appears. The security groups are case sensitive.*

7. Optionally, enter a description of the Historian Security Group in the Description field.

8. Click Create.

9. Click Close.

Adding Users to a Windows Security Group

Before adding users to your group, you must first add your users to the Windows system. For more information on adding users, refer to the Users Overview section of the Windows 2003 or XP Professional SP3 online Help.

▸ To add a user to a group:

1. Open the Control Panel.

2. Double-click the Administrative Tools icon.

3. Double-click the Computer Management icon.

4. Select Groups from the Local Users and Groups folder in the system tree.

5. Select the group to which you want to add users.

6. From the Action menu, select Properties. The Users Properties dialog box appears.

7. Click the Add button.

8. Select the users or groups to add from the listed users or enter the names of the users or groups you want to add in the bottom field.

9. Click the Add button.

   TIP: *To validate the user or group names that you are adding, click the Check Names button.*

10. When you have added all users to the group, click OK.

To add a local user:

1. Verify object types is Users or Groups.

2. Verify the From This Location setting is your local machine. (Click Locations to specify the local machine, if required.)

3. Click the Advanced button.

4. Click Find Now.
5. Select the users or groups to add from the listed users or enter the names of the users or groups you want to add in the bottom field.
6. Click the OK button in the Advanced dialog
7. Click the OK button in the Select Users dialog.
8. Click the OK button in the group properties dialog.

To Add a Domain User

1. Verify object types is Users or Groups.
2. Verify the From This Location setting is your windows domain.
    a. Click Locations to specify the domain, if required.
    b. Select Entire Directory or the specific domain underneath Entire Directory.
    c. Click OK
3. Click the Advanced button.
4. Click Find Now.
5. Select the users or groups to add from the listed users or enter the names of the users or groups you want to add in the bottom field.
6. Click the OK button in the Advanced dialog.

7. Click the OK button in the Select Users dialog.

8. Click the OK button the group properties dialog.

Avoiding Unauthorized Access When Using Historian Security

To ensure a secure environment when using Historian security, do not create any local user accounts unless Historian is set up on a standalone machine. Also, disable the Windows Guest account.

Working with Domain Security

When you configure Historian to use Domain security groups and security groups exist, it attempts to locate either the Primary Domain Controller (PDC) or one of the Backup Domain Controllers (BDC) in order to find Historian Security Group information. If the Historian Server machine is not a member of a domain, or if a Primary or Backup Domain Controller cannot be located when the Historian Data Archiver service starts, access to Historian is denied to all users.

In this case, it is necessary to make the Historian Server a member of a domain and to make sure a Domain Controller is available before starting or restarting the Historian Data Archiver service. For convenience, the data archiver Show (.SHW) file lists all PDCs and BDCs available at the time of archiver startup. Use this list to verify that the Historian Server has visibility into the appropriate domain.

After the list of Domain Controllers has been established, the Historian Server will use that list to query for Security Group Membership on an as needed basis. If at any time a request for Group Membership information is made and the Primary Domain Controller is not available, Historian selects the first Backup Domain Controller and attempts the same request. If a Backup Domain Controller successfully responds to the request, the process of querying for Group Membership can stop. Otherwise, Historian will attempt to query Group Membership information from the next available Backup Domain Controller. If no Backup Domain Controller successfully responds, access to the system is denied.

Changing security group configuration from Local to Domain or vice versa requires that the Historian Data Archiver service be restarted for the change to take effect.

Creating Security Groups in Windows 2003 Controller

To create a new Global security group in a Windows 2003 Domain:

1. Double-click the Administrative Tools Icon in the Control Panel. The Administrative Tools dialog box opens.
2. Double-click the Active Directory Users and Computer icon. The Active Directory dialog box opens.
3. In the Active Directory Tree display, select Users.
4. Right-click on Users to display the right-click menu.
5. Select New and click Group from the right-click menu. The New Object - Group dialog box appears.
6. In the Group name field, enter the name of the new Historian group exactly as you have defined it. Leave the other default options unchanged.
7. Click OK to create the new group.

Creating Security Groups in Windows 2008 Domain Controller

To create a new security group in a Windows 2008 Domain:

1. Double-click the Administrative Tools Icon in the Control Panel. The Administrative Tools dialog box opens.

2. Double-click the Active Directory Users and Computer icon. The Active Directory dialog box opens.

3. In the Active Directory Tree display, select Users.

4. Right-click on Users to display the right-click menu.

5. Select New and click Group from the right-click menu. The New Object - Group dialog box appears.

6. In the Group name field, enter the name of the new Historian group exactly as you have defined it. Leave the other default options unchanged.

7. Click OK to create the new group.

Using a Windows 2003 Domain Controller with a Windows 2008 Historian Server

When you use domain security with a Windows 2008 Historian Server and the domain controller is a Windows 2003 controller, you must configure the Historian DataArchiver service to log on as a valid domain account and you must add the user right to Act as a Part of the Operating System to its list of rights.

To do this:

Set Up Logon of Historian Data Archiver Service

1. In Control Panel -> Administrative Tools, double-click the Services icon. The Services dialog box opens.

2. Double-click Historian Data Archiver. A Service dialog box appears.

3. In the Log On As panel, click This Account and select a domain user account.

4. Click OK.

Add the Act as Part of Operating System Right to the Domain Account

1. In Administrative Tools, double-click the Domain Security Policy icon. The Default Domain Security Settings dialog box opens.

2. Select User Rights Assessment from Local Policies in the Security Settings tree.

3. Double-click the Act as a part of the operating system policy. The Act as a part of the operation system dialog appears.

4. Select Define these policy settings check box and click Add User or Group button. The Add Users and Groups dialog box appears.

5. Select your domain username.

6. Click the Add button and then click OK.

7. In Services, restart Historian DataArchiver.

You should now be able to log on to Historian Administrator using Domain Security.

If you attempt to log on the Historian Data Archiver as a Local System Account, you may be denied access because the System Account in Windows 2008 is not privileged to access the Windows 2003 Domain Administrator. A valid domain user account, however, is privileged to access the Windows 2003 Domain Administrator if it is has also been granted the Act as a Part of the Operating System right.

Configuring DataArchiver to use Active Directory Service Interface

By default, the DataArchiver tries to enumerate all the available domain controllers during startup. If a Primary or Backup Domain Controller cannot be located when the Historian DataArchiver service starts, access to Historian is denied to all users. Also when you have domain controller machines spread across a wide area network (WAN), you may find that logins are successful but slow.

With the Active Directory Support feature, you can configure the DataArchiver to use a different set of Windows calls called Active Directory Services Interface (ADSI) when using Historian security. Configuring the DataArchiver to use Active Directory Services Interface (ADSI) allows you to:

1. Login to the Historian even if the DataArchiver is unable to enumerate any domain controllers during the DataArchiver startup.

2. Access a Backup Domain Controller if a Primary Domain Controller is not available temporarily or permanently.

You should configure the DataArchiver to use Active Directory Services Interface (ADSI) only when the DataArchiver fails to enumerate domain controllers.

You can determine if a DataArchiver is able to locate a domain controller by viewing the dataarchiver.shw log file. In the dataarchiver.shw log file If "**Group Server #01:** "is empty, then the DataArchiver is unable to locate a domain controller.

```
Security Settings

=================

                          Group Mode : GLOBAL

   Use Client Windows User for Logon : TRUE
```

```
Security Domain : <your domain>

Group Server #01 :

Use ADSI calls : FALSE
```

NOTE: *You must run the DataArchiver under an account with domain administrator privileges to use Active Directory Services Interface either temporarily or permanently.*

The following procedures provide guidelines for configuring the DataArchiver to use Active Directory Services Interface (ADSI) calls.

Creating a registry key and turning on the UseADSICalls

1. From the Start menu, select Run, and then enter Regedit.
2. Open the following key folder: HKEY_LOCAL_MACHINE\SOFTWARE\Intellution, Inc.\Historian\Services\DataArchiver\
3. Add a new DWORD value. Enter the name “UseADSICalls”, and select Base as Decimal.
4. In the Value data field, type 1.
5. Click OK.
6. Close the Registry Editor and configure the DataArchiver service to run as domain administrator.

Configuring the DataArchiver service to run as domain administrator

1. In the Control Panel, double-click the Services icon. (In Windows Vista and

Server 2008, open Administrative Tools from the Control Panel.) The Services dialog box opens.

2. Right-click the Historian DataArchiver service and select Properties.

3. Click the Log On tab, and then select the Log on as This account to log on special account.

4. Click the Browse button and select the user account.

5. In the Password and the Confirm password fields, enter the password for the user account, and then click OK.

Restart the DataArchiver service

1. In the Control Panel, double-click the Services icon. (In Windows Vista and Server 2008, open Administrative Tools from the Control Panel.) The Services dialog box opens.

2. Right-click the Historian DataArchiver service and click Restart.

Reviewing the .SHW log file

The DataArchiver.SHW log file is used to examine the current configuration of a DataArchiver. The default path for LOG and SHW files is c:\Program Files\Proficy\Proficy Historian\LogFiles.

If the DataArchiver is set correctly to use Active Directory Services Interface (ADSI), then you can find the following text in the DataArchiver.SHW log file

```
Security Settings
```

```
=================

                          Group Mode : GLOBAL
   Use Client Windows User for Logon : TRUE
                   Security Domain : <your domain>
                    Use ADSI calls : TRUE
```

Establishing Your Security Rights

Your security identity is established upon connecting to the server. This occurs through the following steps:

1. Specifying a username and password of an account.

Upon connection, the system checks to see if you have a valid Windows 2003 account. If you have supplied a username and password (through the Excel Add-In for example), security checks that user. If username and password are not supplied and you are on a Windows 2003 or Windows 2008 machine or higher, security checks the currently logged in user. If you are running a Windows 98 machine, you must supply a username and password. Security will not automatically check the logged in user.

> ***NOTE:*** *If you do not pass a domain name the account will be checked locally in the same way a mapped drive attempt happens. You have to specify a username and password that exists on the server.*

2. Determining group membership of that account.

Once the account is validated, the server determines group membership. For more information on the process and hierarchy of the groups, refer to the Identifying the Security Checking Process section.

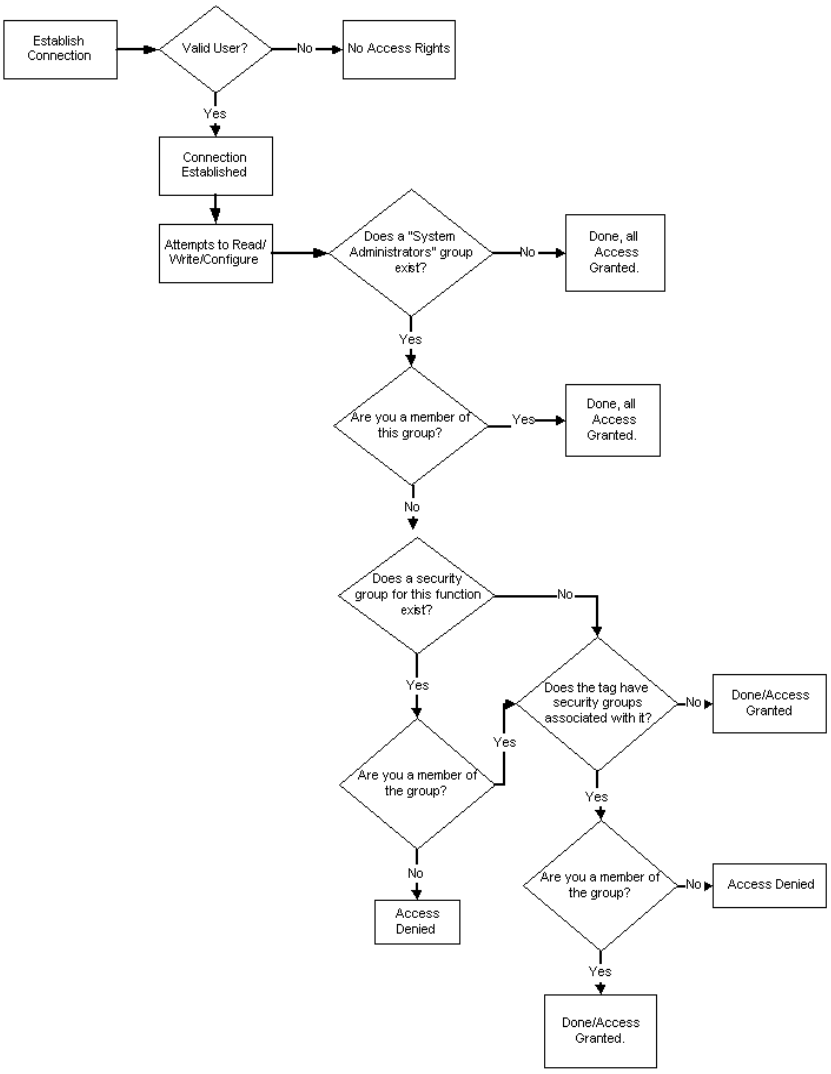
3. Caching membership profile.

Once the group and tag membership are determined, it is cached for the connection and not looked up again. If users are added to or deleted from a group, the cache is not updated.

> ***NOTE:*** *The cache information is per connection, and not per IP address. In other words, it is cached per application and not per system.*

Identifying the Security Checking Process

The following figure details the security checking process.


Establish Connection
Valid User?
No
No Access Rights
Yes
Connection Established
Attempts to Read/ Write/Configure
Does a "System Administrators" group exist?
No
Done, all Access Granted.
Yes
Are you a member of this group?
Yes
Done, all Access Granted.
No
Does a security group for this function exist?
No
Yes
Are you a member of the group?
Yes
Does the tag have security groups associated with it?
No
Done/Access Granted
Yes
No
Access Denied
Are you a member of the group?
No
Access Denied
Yes
Done/Access Granted.

Implementing Tag Level Security

In addition to defining iH Tag Admins that have the power to create, modify, and remove tags, you can also define individual tag level security to protect sensitive tags.

This tag level security can be set in the Historian Administrator. You do not need to use the Historian Security Groups for this security setting. You may use one of the Windows pre-defined groups (power users, for example) or create your own separate group specifically for this function. For more information on creating and adding groups, refer to the Setting up Historian Security Groups section.

NOTE: *Only a user defined as an iH Security Admins has rights to set individual tag level security in the Historian Administrator.*

To set Tag Level Security for an individual tag:

1. Open the Historian Administrator.
2. Click on the Tags link. The Tag Maintenance screen appears.
3. Select a tag (or group of tags) from the Tag Name section of the Tag Maintenance screen.
4. Click on the Advanced Tab to display the advanced tag options.
5. In the Read Group, Write Group, or Administer Group field, select the security group that you wish to assign to the tag from the drop-down list.

The drop-down list automatically lists all security groups that are defined in your Windows security environment.

For example, if an iH Security Admins user selects a tag and chooses power users from the Read Group drop-down list, in addition to members of the iH Security Admins group, only a member of the power users group will be able to read data for that tag. Even a member of the iH Readers group will not be able to access data for that tag, unless they are also defined as a member of the power users group.

Retrieving Data from Historian

After data collection, the Historian Server compresses and stores the information in the Archive Database. Any client application can retrieve archived data through the Historian API. The Historian API is a client/server programming interface that maintains connectivity to the Historian Server and provides functions for data storage and retrieval in a distributed network environment.

You can retrieve data from Historian using one of the following:

- iFIX
- CIMPLICITY
- Excel Add-In
- Custom SDK Applications
- OLE DB

Sampling and calculation modes are used on retrieval of data that has already been collected to the archive. These modes do not effect data collection. Some sampling modes are suited to compressed data and should be used when collector compression or archive compression is used.

Sampling Modes

Sampling modes are used to specify how the data will be retrieved from Historian. Several modes are available, such as CurrentValue, Interpolated, Calculated and RawByTime.

Sampling modes are specified in the client you use to retrieve data from Historian.

Descriptions and common usages of the sampling modes in Historian are as follows:

Sampling Mode	Results
CurrentValue	Retrieves the most recent data sample value received by the archiver, of any data quality. This does not necessarily produce the most recent raw data sample, as archive compression may not have stored the most recent raw sample. The sample has a time stamp, a value, and a quality. The time stamp returned is not typically the current time; it is the time stamp as sent by the collector. If you have a slow poll rate or if collector compression is enabled, the time stamp may be much earlier than the current time.
RawByTime	Returns all raw samples of all qualities with a time stamp greater than a specified start time, and less than or equal to a specified end time. The RawByTime sampling mode will not return a sample equal to the start time.
RawByNumber	Returns a specified number of samples of all qualities with a time stamp greater than or equal to the start time. The RawByNumber sampling mode will return a sample with a time stamp equal to the start time if one exists You must also specify a direction and number of samples when using this sampling mode.
Interpolated	When archive or collector compression is used, a minimal number of actual data samples are stored in the archive.

	When this data is retrieved, interpolation can be performed to create an evenly spaced list of most likely real-world values (since the actual values have been removed from the archive through the compression algorithm). The Interpolated sampling mode is also useful for data samples that haven't undergone archive compression. For example, you may want to plot data along an interval that doesn't match the collected raw samples. Using the Interpolated sampling mode would give you the most likely real-world values for the specified period. Typically, you use the interpolated sampling mode when data is not collected on a set time schedule, or if you want to see the results returned in an interval that is slower than the collection rate. For example, these instances show when you can use interpolated mode to make evenly spaced values: • A tag is collected as "unsolicited." In this case, we really do not know what the time interval is between collected values. • The deadband and/or archive compression for a tag results in non-evenly spaced collection intervals. • A tag is collected once per 8-hour shift, but you want to see it displayed in 1 hour intervals with a linear slope between points.
Lab	The Lab sampling mode only returns the collected values, without any interpolation of the value. The collected value is repeated for each interval until there is a change

	in the raw data sample's value. Lab sampling is most often used to create a step chart rather than a smooth curve. Use Lab sampling instead of interpolated if you only want true collected values returned. The Lab sampling mode is generally not useful on highly compressed data. Use interpolated sampling instead.
Trend	The Trend sampling mode was designed to produce maximum performance when retrieving data for plotting, particularly over long time periods. The trend sampling mode returns the maximum and minimum value collected during each interval. When plotted, this makes it possible to display an accurate representation of the data that won't miss any extremums, by only retrieving a minimum of points. For example, a trend of 1 year of data with a 1 day interval will return 730 values consisting of the 365 minimums and 365 maximums for each day of the year.
Calculated	Returns samples based on a selected Calculation mode. Refer to Calculation Modes for more information.

Calculation Modes

Calculation modes are used when the sampling mode is set to **Calculated**. The data type of all calculated values will be **DoubleFloat** except for **MinimumTime** and **MaximumTime,** which will be a **Date**.

The calculation modes in Historian are:

Calculation Mode	Results
Count	Displays the number of raw samples in the specified interval. This only indicates the count and does not display the actual values or qualities of the samples. The Count calculation mode is useful for analyzing the distribution of raw data samples. If you have a higher number of raw samples than expected, you may decide to implement collector or archive compression. If samples are missing then you may want to slow your collection rates
Minimum	Displays the minimum value in a specified interval with good data quality. This value may be raw or interpolated. ***NOTE:*** *The Minimum and MinimumTime calculation modes actually retrieve two additional samples per interval; one is interpolated at the interval start time and the other is interpolated at the interval end time. These samples are used in calculations just like any raw or interpolated value.*
MinimumTime	Displays the time stamp of the minimum value in a specified interval. See the note in Minimum for additional information.
Maximum	Displays the maximum value in a specified interval.

	NOTE: *The Maximum and MaxmimumTime calculation modes actually retrieve two additional samples per interval; one is interpolated at the interval start time and the other is interpolated at the interval end time. These samples are used in calculations just like any raw or interpolated value.*
MaximumTime	Displays the time stamp of the maximum value in a specified interval. See the note in Maximum for additional information.
RawAverage	Displays the arithmetic average of the raw values in a specified interval with good data quality. This is useful only when a sufficient number of raw data values are collected.
Average	Similar to RawAverage, but performs a special logic for time weighting and for computing the value at the start of the interval. This is useful for computing an average on compressed data.
Total	Retrieves the time-weighted total of raw and interpolated values for each calculation interval. The collected value must be a rate per 24 hours. This calculation mode determines a count from the collected rate.
RawTotal	Displays the arithmetic sum of raw values in a

	specified interval.
StandardDeviation	Displays the time-weighted standard deviation of raw values for a specified interval.
RawStandardDeviation	Displays the arithmetic standard deviation of raw values for a specified interval.
TimeGood	Displays the amount of time (in milliseconds) during an interval when the data is of good quality and matches filter conditions if the filter tag is used.

Filtered Data Queries

Filtered data queries enhance Historian by adding filter tags and additional filtering criteria to standard queries. Unfiltered data queries in Historian allow you to specify a start and end time for the query, then return all data samples within that interval. A filtered data query, however, will allow you to specify a condition to filter the results by, as well as calculation modes to perform on the returned data. Filtered data queries are performed on the Historian server.

For example, a filtered data query is useful when trying to retrieve all data for a specific Batch ID, Lot Number, or Product Code and for filtering data where certain limits were exceeded, such as all data where a temperature exceeded a certain value. Rather than filtering a full day's worth of process data in the client application, you can filter data in the Historian archiver, and only return the matching results to the client application. The result is a smaller, more relevant data set.

You can use filter criteria with raw, interpolated, and calculated sampling modes. You cannot use it with current value sampling. The logic of selecting intervals is always

interpolated, even when the data retrieval is raw or calculated. The value that triggers a transition from false to true can be a raw value or interpolated value.

For Historian, you can use filtered data queries when retrieving data from the following applications:

- Excel Add-In
- OLE DB Provider
- SDK programs

You can also use filtered data queries with other applications, such as the Proficy Real Time Information Portal event chart. You cannot use a filtered data query in an iFIX chart.

Overview of Filtered Data Query Parameters

Use of filter parameters with a data query is optional. The following table describes each of the filtering parameters you can use.

TIP: *To enable filtering, specify a Filter Tag. All other parameters are ignored if the Filter Tag is not set.*

Filter Parameters for Data Queries	
Parameter	**Description**
Filter Tag	The single tag name used when applying the filter criteria. Entering a tag for this parameter indicates that you want to perform a filtered data query. The other filter fields are disregarded unless you specify a filter tag.

Filter Mode	The type of time filter: • **ExactTime** – Retrieves data for the exact times that the filter condition is True (only True). • **BeforeTime** – Retrieves data from the time of the last False filter condition up until the time of the True condition (False until True). • **AfterTime** – Retrieves data from the time of the True filter condition up until the time of next False condition (True until False). • **BeforeAndAfterTime** – Retrieves data from the time of the last False filter condition up until the time of next False condition (While True). The Filter Mode defines how time periods before and after transitions in the filter condition should be handled. For example, AfterTime indicates that the filter condition should be True starting at the timestamp of the archive value that triggered the True condition and leading up to the timestamp of the archive value that triggered the False condition.
Filter Comparison Mode	The type of comparison to be made on the filter comparison value: • **Equal** – Filter condition is True when the Filter Tag is equal to the comparison value. • **EqualFirst** – Filter condition is True when the Filter Tag is equal to the first comparison value. • **EqualLast** – Filter condition is True when the Filter Tag is equal to the last comparison value.

	• **NotEqual** – Filter condition is True when the Filter Tag is NOT equal to the comparison value. • **LessThan** – Filter condition is True when the Filter Tag is less than the comparison value. • **GreaterThan** – Filter condition is True when the Filter Tag is greater than the comparison value. • **LessThanEqual** – Filter condition is True when the Filter Tag is less than or equal to the comparison value. • **GreaterThanEqual** – Filter condition is True when the Filter Tag is greater than or equal to the comparison value. • **Alarm Condition** – Specifies an alarm condition to filter data by. For example, *Level*. • **Alarm SubCondition** – Specifies an alarm sub-condition to filter data by. For example, *HIHI*. The Filter Comparison Mode defines how archive values for the Filter Tag should be compared to the Filter Value to establish the state of the filter condition. If a Filter Tag and Filter Comparison Value are supplied, time periods are filtered from the results where the filter condition is False.
Filter Comparison Value	The value to compare the filter tag with when applying the appropriate filter to the data record set query (to determine the appropriate filter times).

Example: Filtered Queries in the Excel Add-In

The following example shows how a filtered data query will return specific data from the Historian archive.

This example makes use of two tags, **batchid** and **ramp**. The **batchid** tag is updated before a new batch is produced with the new batch's ID. The **ramp** tag contains raw data sent by a device in the process. In this example, we'd like Historian to return data samples at ten second intervals for the **ramp** tag during the period that the **batchid** tag is set to *B1*.

A standard query in Historian for the ramp tag's values between 08:00 and 08:01, at ten second intervals, would look like this:

Time Stamp	Value	Data Quality
07/30/2003 08:00:10	16	Good
07/30/2003 08:00:20	22	Good
07/30/2003 08:00:30	34	Good
07/30/2003 08:00:40	46	Good
07/30/2003 08:00:50	50	Good
07/30/2003 08:01:00	55	Good

If we did a query against the batchid tag for the same time interval, we would receive the following results:

Time Stamp	Value	Data Quality
07/30/2003 08:00:00	B0	Good
07/30/2003 08:00:20	B1	Good
07/30/2003 08:00:45	B2	Good

To filter data queries in the Excel Add-in:

In order to find the values of the ramp tag for the B1 batch, you would enter the following values into the Historian Filtered Data Query dialog box:

1. In the **Tag Name(s)** field, enter the tag you want to receive results from - the ramp tag in this example.
2. Select a start and end time for your query.
3. In the **Filter Tag** field, enter the tag you want to enable filtering with - *batchid* in this example..
4. In the **Filter Comparison** field, select your comparison condition.
5. In the **Include Data Where Value Is** field, enter your filter condition value.
6. In the **Include Times** field, select your filter mode.
7. In the **Sampling Type** field, select your sampling mode.

8. In the **Calculation** field, select your calculation mode.

9. Select your **Sampling Interval.**

10. In the **Output Display** field, select which tag values you wish to display.

The output of the above would look similar to this:

Time Stamp	Value	Data Quality
07/30/2003 08:00:20	22	Good
07/30/2003 08:00:30	34	Good
07/30/2003 08:00:40	46	Good

Note that although we specified a start time of 08:00 and an end time of 08:01, Historian has only returned data samples that are relevant to the batch B1.

Using Historian with iFIX

You can enhance the power of the Historian by pairing it with iFIX. The benefits of using Historian with iFIX clients include:

- iFIX Chart features:
    - Sub-second support
    - Auto Update
    - Time Zone Support
    - Daylight Savings Time (DST) Support
    - Filter and Sort by description, and directly access OPC tags in the Expression Editor
    - Support for Historian interpolated data retrieval.
- Ability to access multiple Historian Servers (even within the same chart).
- The ability to easily script against the SDK in VBA. This allows you to retrieve record sets in Historian for processing and display, and to build time-aware graphics that can display animations from any selected time.
- Writing status information directly into iFIX tags, so the health of the iFIX Collector can be monitored in real time within iFIX.

- Easy migration of iFIX Classic Historian Configuration and Data.
- Easy migration of iFIX Alarm and Event Data.
- Collection of iFIX Alarm and Event Data.

  NOTE: *You can plot any collected data, not just iFIX Collector data.*

Please be aware of the following when using Historian with iFIX:

- You must install iFIX before installing Historian if you want to install the iFIX Collector. If you attempt to install Historian on a machine without iFIX installed and select the iFIX Collector under the Select Components, a message appears stating that iFIX is required on this node to install the iFIX Collector.
- You must install the iFIX Alarm & Event server before installing the iFIX AE Collector from the Historian installation and setup program.
- You must manually import the Historian Toolbar into the iFIX WorkSpace after you have installed Historian. Refer to Importing the Historian Toolbar into iFIX for more information.
- In working with iFIX, be aware that the Historian user owns the archive process and that Historian security is independent of iFIX security.
- If you attempt to use the iFIX Chart Group Wizard to add Simulation or OPC tags, you will receive an error. The Chart Group Wizard only supports iFIX Historian tags that use the iFIX historical tag naming convention.
- Historian does not support the installation of collectors or servers on Terminal Server machines running in application server mode.

Using iFIX drivers with Historian

If you are running iFIX in your Historian environment, you can use any iFIX driver (version 6.X or 7.X). Historian uses data from the iFIX process database, therefore once the driver brings the data into the Process Database (PDB), it is available to Historian via EDA and the iFIX Collector.

Collecting iFIX Alarm and Event Data

Historian supports Alarm and Event collection from an iFIX server.

To configure the iFIX AE collector to start automatically when iFIX starts add the iFIX AE collector to the list of startup tasks in the System Configuration Utility (SCU).

To add the collector to the SCU list, open the **Task Configuration** dialog box in iFIX, enter *ihIFIXAECollector.EXE* in the **Filename** field and *runasdos* in the **Command Line** field, and click the **Add** button.

NOTES:

- *After starting the iFIX AE collector you will need to use the Historian administration tool to link it to its associated iFIX data collector.*
- *If ItemIDs are not being collected, and you see an entry in your log file that says "Alarm Item IDs Will Not Be Collected. 'CV' Vendor Attribute Not Found", you must increase the Delay Collection at Startup (sec) value in the collector's configuration.*

For more information, refer to the following topic:

- OPC Alarm and Event Collector.

Viewing Historian Values and Time Stamps in an iFIX

Chart

When viewing an iFIX chart, set the interval time to a fine granularity to ensure that you will see Historian values and Time Stamps when you zoom in on the chart.

Importing the Historian Toolbar into iFIX

You must import the Historian toolbar into the iFIX WorkSpace after you have successfully installed Historian.

To import the toolbar:

1. Open the iFIX WorkSpace.
2. Select Toolbars from the WorkSpace menu. The Toolbars dialog box appears.
3. Select WorkSpace from the Owners list.
4. Click the Customize button. The Customize Toolbars dialog box appears.
5. Click the Import button. The Import Toolbars dialog box appears.
6. Select Historian from the Toolbars list.
7. Click the Import button to import the Historian Toolbar.
8. Click the Close button. The Customize Toolbars dialog box closes and the Historian Toolbar appears in the iFIX WorkSpace.

NOTE: *The Configure Historian Servers toolbar in the WorkSpace specifies the location of historical data retrieval for the WorkSpace, not the location of the historical data storage. You can view/retrieve data stored on these listed servers while you select a pen for a chart display. The Configure Historian Servers dialog also determines where HDA programs and historical ODBC retrieve data from, which is always the default server.*

Using the Toolbar Buttons

Use the Change Historian button (left-most button on the toolbar) to switch to Historian mode to browse tags and retrieve data from your Historian Server.

Formatting OPC Tags Containing Special Characters

After selecting an OPC tag in the Expression Builder, you must add single quotes to the pen list in order to handle special characters.

For example:

```
Hist.node1.Data Point.Int2

`Hist.node1.'Data Point.Int2'
```

If a single quote (`) or a backslash (\) is a literal part of the addressing string syntax (e.g. HIST.NODE1.'MIXER'LINE.INT2), it must be preceded by a backslash (\) in order for the character to be passed to the server as part of the address (HIST.NODE1.\'MIXER\'LINE.INT2).

Filtering Tags Using THISNODE with Expression Builder

If you configure an iFIX node to use Local Node Alias and then use for example MIXER as the node name, you can use a filter such as M* to return a list of all tags that start with M including THISNODE. If you use T* as a filter, no tags will be returned, because THISNODE is an alias, not a real node name.

The iFIX Data Collector

Several components of Historian, such as the iFIX Data Collector, work with iFIX. The iFIX Data Collector uses the Easy Data Access (EDA) protocol to retrieve data from a running iFIX system.

The iFIX Install program automatically provides an iFIX node name to the iFIX Data Collector. The default name is iFIXnodename_iFIX. If you browse tags, the Data Collector retrieves every tag with a node name that matches the one you are browsing. Refer to the Historian Data Collector manual for more information on Data Collector tag

configuration.

NOTE: *You can install only one iFIX Data Collector per computer.*

The preferred way to start an iFIX Collector is to add the collector to the iFIX System Configuration Utility (SCU) list. The collector then starts automatically whenever you start iFIX.

To add the collector to the SCU list, open the Task Configuration dialog box in iFIX, enter "ihFixCollector.exe" in the Filename field and "runasdos" in the Command Line field, and click the Add button.

IMPORTANT: *Stop the iFIX collector before attempting to modify selected iFIX or FIX database blocks and fields you want to be made available in a browse. You can access the blocks and fields from the Configuration tab of the Collector Maintenance screen.*

Historian and iFIX Chart Objects

The iFIX chart object plots the last recorded value for pens using Historian tags if the data for those tags comes in from a data collector and the collector loses its connection to the data archiver.

Suppose you configure an iFIX chart object to auto-update the historical data. If the data collector loses its connection to the data archiver, the iFIX chart object flatlines at the last recorded value. When the connection between the collector and archiver is reestablished, the chart then shows the correct data for the period in which the collector was not available.

Optionally, you can use a heartbeat to determine when the iFIX Data Collector stops sending data and restart the collector. For more information, refer to the Example: Restarting the iFIX Collector Using a Heartbeat section in chapter 6 of the Historian Data Collectors guide.

Browsing iFIX Tags On Networked iFIX Nodes

It is recommended that you install an iFIX Collector on each node you want to collect data from. You can choose, however, to use the iFIX networking structure to bring tags into your iFIX Collector from multiple iFIX nodes or systems.

To select multiple nodes to browse from modify the Nodes to Browse field in the Configuration Tab of the Collector Maintenance screen. This field displays the mask used to select tags when performing a browse of the collector node. The default is the iFIX SCADA or VIEW (iClient) node name that you installed the collector on. If you want to browse for tags on other iFIX nodes via FIX networking, you can enter the other node name(s) here, separated by commas with no spaces. You must have the iFIX system configured for networking.

For more information, refer to the iFIX Electronic Books on FIX networking.

Contact GE Intelligent Platforms

If you purchased this product through an Authorized Channel Partner, please contact the seller directly.

General Contact Information

Online technical support & GlobalCare: www.ge-ip.com/support

Comments about our manuals and online Help: doc@ge.com

Additional information: www.ge-ip.com

Solution Provider: solutionprovider.ip@ge.com

Authorization: authorization.ip@ge.com

Technical Support

If you have technical problems that cannot be resolved with the information in this guide, please contact us by telephone or e-mail, or on the web at www.ge-ip.com/support.

Americas

Online technical support: www.ge-ip.com/support

Telephone: 1-800-433-2682

International Americas direct dial: 1-780-420-2010 (if toll free 800 option is unavailable)

Technical Support e-mail: support.ip@ge.com

Customer Care e-mail: customercare.ip@ge.com

Inside Sales: insidesales.ip@ge.com

Primary language of support: English

Europe, Middle East, and Africa

Online technical support: www.ge-ip.com/support

Telephone: +800 1-433-2682

EMEA direct dial: +352-26-722-780 (if toll free 800 option is unavailable or dialing from a mobile telephone)

Technical Support e-mail: support.emea.ip@ge.com

Customer Care e-mail: customercare.emea.ip@ge.com

Inside Sales: insidesales.emea.ip@ge.com

Primary language(s) of support: English, French, German, Italian, Czech, Spanish

Asia Pacific

Online technical support & GlobalCare: www.ge-ip.com/support

Telephone: +86-400-820-8208,

+86-21-3217-4826 (India, Indonesia, and Pakistan)

Technical Support e-mail: support.cn.ip@ge.com (China)

support.jp.ip@ge.com (Japan)

support.in.ip@ge.com (other Asian locales)

Customer Care e-mail: customercare.apo.ip@ge.com

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